

Children's Newspaper

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The CHILDREN'S NEWSPAPER

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EDITED BY ARTHUR MEE

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WHY THE MORNINGS ARE DARK

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Eight

THE WONDERFUL RED RAYS

SECRET SIGNALS OVER A DISTANCE

The Invisible Beam that Puts a
Light Out

MYSTERY TELEGRAPHY

By a Scientific Correspondent

Wonderful as are the results given by ordinary wireless, there are many other methods of sending signals without electric wires which are of great importance. Men are, for instance, learning to use the very dark red rays contained in white light.

The C.N. has already described them, but new facts are ever coming to hand.

With these red rays men can find just where a ship is at night or in foggy weather, and can tell when an iceberg is near. They can signal over distances of three or four miles by day or night with a simple little apparatus that can be held in the hand.

Rainbow Colours

If you pass a beam of white light through a glass prism, as Newton did, you will find that the light is split up into all the rainbow colours, a beautiful band of colour beginning with red and ending with violet. But the light contains other rays besides the coloured ones we can see; it contains "red" rays so deep in colour that they are invisible. These are called the infra-red rays (below the red), just as beyond the violet there are other invisible rays called ultra-violet (beyond the violet).

These infra-red rays have the power to pass through fog and mist, and will travel several miles if sent out like a searchlight beam. The rays are generated by a powerful electric arc lamp which is fitted with a parabolic mirror like that of a searchlight. This mirror reflects the rays in a narrow beam which spreads very little, so that its strength is not scattered.

How It is Done

In front of the lamp is placed a dark glass coated with some material which blocks out all the white light and allows only the invisible rays to pass. The searchlight is guided by means of a telescope attached to it, and the beam of invisible rays is directed upon the spot with which communication is to be held.

At this spot is a curved mirror, which picks up the rays and brings them to a focus on a marvellous little screen. This screen is just a bit of cardboard or paper ribbon covered with some crystals, which are glowing brightly because from a special little lamp near by another kind of ray is being thrown upon them, and this ultra-violet ray, (also invisible) causes the crystals to glow. Now, by an extraordinary freak of Nature the glowing crystals become instantly dead and dark if any infra-red light falls upon them. So this is

what happens: each time the invisible searchlight beam falls on the crystals their light is put out.

When a message is being sent the sender makes his dark red beam shine at intervals; a long flash means a Morse code dash, a short flash means a Morse dot. He therefore sends his message in the dots and dashes known to every telegraphist. The man taking the message watches his little crystal screen, and each time its light is extinguished by the red rays for a long period he knows that a dash has been signalled, while a dot is understood each time the crystal screen goes out for a short period. In this way messages can be telegraphed for some miles.

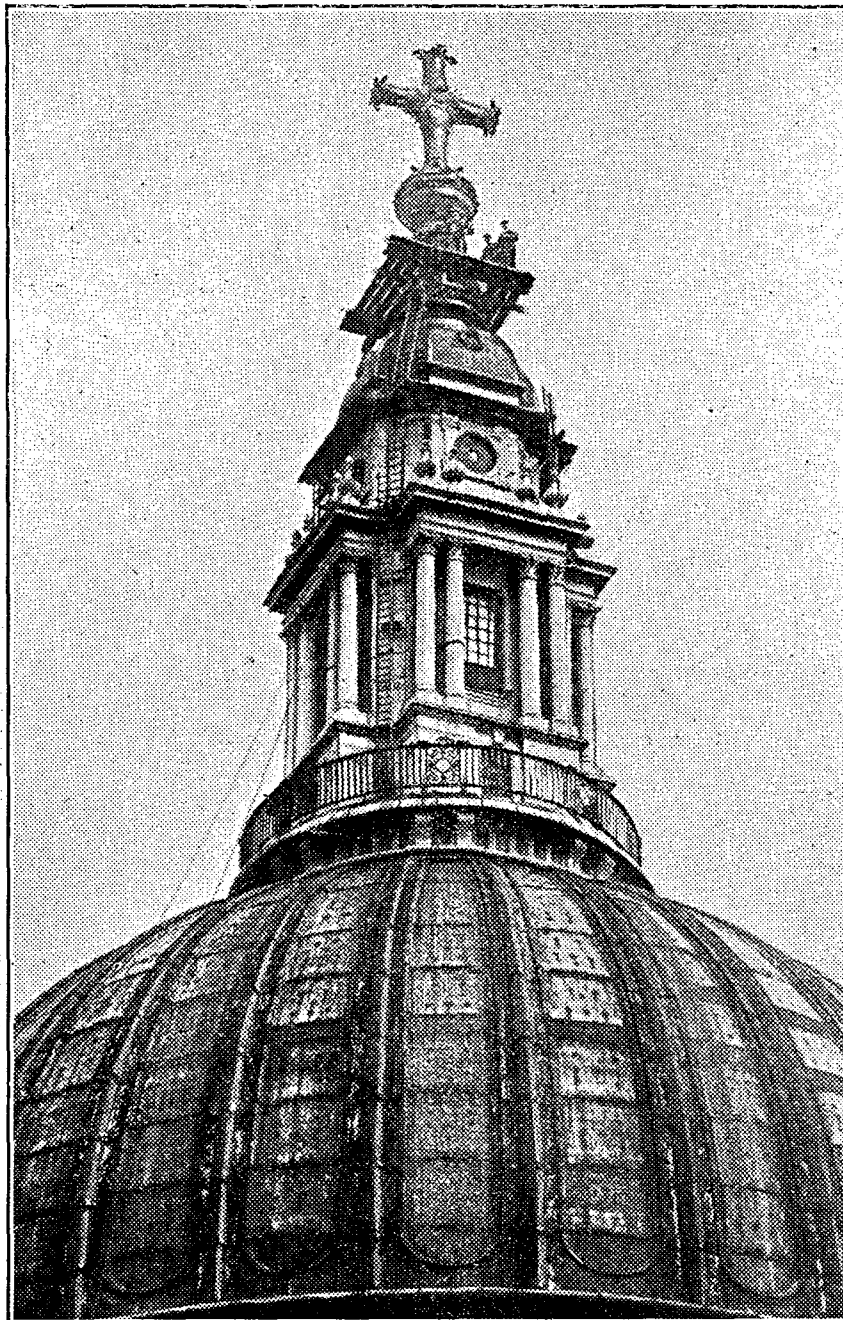
The remarkable system which has lately been worked out to enable a ship to detect the approach of an iceberg is a

special form of an instrument used by astronomers to measure invisible lines in the infra-red part of the Sun's spectrum.

If the apparatus is placed at some part of the ship facing an oncoming iceberg, the side facing the iceberg will be slightly cooled, and this will give rise to an electric current, which operates a sensitive galvanometer. The movement of the galvanometer is the warning that an iceberg is not far away.

The infra-red rays, which pass easily through fog and mist, can also be made to operate a simple telegraphic sounder, such as is often used by post office telegraphists, so that various ways of applying them can be adopted. They will become a useful helpmate of the bigger wireless installation as more is discovered about their possibilities.

London's Dome in Danger



Sir Christopher Wren's great dome that crowns St. Paul's Cathedral in London is in danger, and at least £140,000 must be spent in repairing the piers that support it, if it is to be saved. The only alternative is to take down the dome and rebuild the piers entirely, a work too costly for today. See page 7

POOR PETER

THE PRISONER OF BRIGHTON

The Porpoise that Refused to
Rest

25,000 MILES IN A TANK

Peripatetic Peter, the porpoise of Brighton Aquarium, is dead, and those who knew him or ever saw him cannot be sorry, for it is the end of a life of a ceaseless search for freedom.

Poor Peter! He never stopped for a second in the patrol of his tank, from the moment when he was turned into it, four months ago, after having been captured at sea. It was a large tank, said to be the largest sea-water tank in existence; but what was it beside the unplumbed salt sea out of which Peter used to leap with joy when the wind blew the waves into crests or the Sun twinkled on them?

To the porpoise it was a murky prison; and if Peter thought at all, or could have put his thoughts into words, they would have been like those of the talking starling which Laurence Sterne saw in a cage, and which never ceased to cry, "I can't get out! I can't get out!"

Long Search for Freedom

For four tireless months Peter went up and down, up and down; thinking that there must be a way out, but never finding it. There was plenty to eat in the prison, for quantities of herrings were flung in, forty a day, and Peter snapped them up as he swam; but their arrival must have puzzled him, for surely, if he found herrings, he must presently find blue water beyond?

So he went on seeking it. He swam 25,000 miles (a journey round the world) to find it; about 180 miles a day he swam in that cribbed and cabled cell. But he never reached port.

Yet perhaps he did. At the inquest on Peter they said he had died of heart failure, due to old age. We are not sure that it was not heart-break due to youth; but at any rate the prisoner is free now, and if there were such a thing as a marine Valhalla for the warriors of the deep, we should like to think that Peter was wallowing brightly in it, leaping joyously out of the phantom waves, gulping phantom herrings, and forgetting the nightmare of his past.

THE WORLD IN A THOUSAND YEARS

The C.E. has ended its second journey round the world this week, and the C.E. men have been asked by the Editor of the C.N. to look ahead a thousand years and say what they think the world will then be like.

They tell us what they think in the new number of My Magazine, now ready on all the bookstalls, and C.N. readers will be greatly interested in this remarkable collection of opinions on life as it may be in that great far-off day.

LET US NOW PRAISE FAMOUS MEN

THREE LOSSES TO THE WORLD

Traveller and Journalist Who
Won Distinction

SWITZERLAND LOSES HER CHIEF POET

The death of Henry Savage Landor not long ago reminds us how recently the most remote parts of the world have been brought into touch with modern civilisation. Buddhist priests have for some time been playing Tibetan music in London for millions of British people to hear its weirdness, but only a little over a quarter of a century ago Landor was horribly tortured by such priests for daring to enter their "Forbidden Land."

Henry Savage Landor was a grandson of the poet Walter Savage Landor. He was born in Florence, and as a young man studied art in Paris, but his soul was set on travel. Particularly he longed to go where few Europeans had been.

World-Wide Adventures

First he visited the tribes of Hairy Ainus in Japan, and then crossed to Korea. Tibet next allured him, and gave him some very rough treatment. On its borders he made fine mountain climbs, and for a while he held the record of having reached a greater height than any other mountaineer. He also claimed to have first reached the sources of the River Brahmaputra.

He visited later the most dangerous groups of the Pacific islands adjoining the East Indies. Also, he made a point of crossing the middle of three continents from ocean to ocean—Asia, Africa, and South America. Between his adventures he sandwiched the writing of books about them.

Landor was the type of man who has scattered the British race into the remotest corners of the Earth, from sheer love of moving on to fresh places.

Student of the Stage

William Archer, who died at the age of 68, was one of a small band of journalists who have made themselves a name by writing about plays and acting. He was a sincere and thoughtful student of the stage, and had a distinct influence on its better fashions. It was largely through his writings and translations that Ibsen, the Norwegian dramatist, became known to British playgoers. Mr. Archer wrote for both English and American newspapers. Though his best-known writing was about the theatre, he never became successful as a playwright until shortly before his death, and then with a melodrama of a kind not expected from him.

About the same time as Mr. Archer's death came the death of another famous man in journalism, Sir F. C. Gould. His was one of the fairest and gentlest brushes that ever drew a cartoon, and, though he was the most famous political cartoonist for many years, he never made an enemy. He died, 80 years old, at his home in Somerset.

Great Poet of a Little Land

Four years ago European lovers of books were surprised to hear that the Swedish Academy, which has the awarding of the handsome Nobel Prize of £6000 or more for the finest literature of each year, had given the prize for 1919 to a Swiss poet, named Charles Frederick George Spitteler. Few outside Switzerland had read his books, though several of them, written in German, had been translated into French. The poet has now died at Lucerne at 79.

Spitteler was a lover of retirement, with no showy ambition, and it is pleasing to think that, after he reached the age of 75, he knew that his writings had added a distinction to his country, a little land that, except for its beauty, does not attract much notice.

THE POST OFFICE CRUSH

Worse and Worse

HOW TO MAKE THE PUBLIC POST EARLY

Last year the Christmas post was bigger than ever.

There was a wet Sunday just before Christmas week and millions of people used it to do up their parcels so as to send them off in good time; and they went to the post offices in such numbers that on Monday morning there were long queues outside some of those places.

But that was not enough to ease the jam of letters and parcels, of which no fewer than eleven millions swelled London's post-bag. The post-bag did not burst, but it took the sorters and the postmen such a very long time to get the letters into the bag and out again that millions of them arrived late. Some of them only got to people when the Christmas pudding and the Boxing Day parties were things of the past and they were back again on Monday at work.

A Remedy

Consequently not a few complainants appeared among the patient British public, and the Postmaster-General, who is not quite so patient, retorted that they should have posted their Christmas wishes earlier. Some of them, of course, had done so, and some had not; but both sets of people were convinced that nobody could post early enough to please the Postmaster-General.

There is some truth in that; and a remedy which nobody seems to have thought of, but which might make matters easier, would be for the Postmaster-General to give people a really good reason for posting well in advance. The C.N. makes the Post Office a present of the idea for this year. The best inducement that could be given to the public to post early would be to make it cheaper for them to do so. *Why not offer to send letters and parcels, especially parcels, at half price a week before Christmas?*

Millions of people would, as usual, forget all about it, and leave their posting to the last moment; but millions of others would jump at the chance. Probably it would halve the crush.

THE BLACK DRAKE LOOKS IN

A Midnight Note from Humbug Scrub in South Australia

BREAKING DUCK LAW

We have been much interested in a note from our old friend Mr. Bellchambers, who writes to tell us of improvements he has been making in his wild-life sanctuary at Humbug Scrub, in South Australia.

The wallabies have now a good paddock, with cover, and the emus have about six or seven acres of open land. More funds are wanted, however, to bring the flock of ducks together, the ducks being now much scattered and many of them running a big risk among the foxes by having their nests outside the fences of the sanctuary.

What we like best in Mr. Bellchambers's note, however, is the picture of our old friend sitting in Humbug Scrub at midnight to tell us this:

Tonight, just before dark, a black duck looked in at the door.

I recognised it as a drake who joined up years ago and never leaves us for long. He is noted for having broken duck law in that he has two wives, who, strange to say, are always in perfect agreement.

This appears to be the relationship they bear to him, but perhaps we had better give him the benefit of the doubt, for one might be his mother-in-law!

Mr. Bellchambers will be delighted to hear from any C.N. readers who would like to help him in improving his sanctuary to save the wild life of Australia.

O.M.

MOST FAMOUS GROUP OF BRITISH PEOPLE

Two New Names and Why They are There

PROFESSOR RUTHERFORD AND SIR JAMES FRAZER

Those who think, as we think, that the Order of Merit is unsurpassed as a national distinction, and makes most of our other titles and distinctions seem pale and poor, will be glad to see two more entirely worthy additions to the order—Sir James G. Frazer and Sir Ernest Rutherford.

The O.M. is restricted to 24 members, exclusive of honorary foreign members. The wastage from this list of distinction is sadly swift. Before the latest additions there were only 17 members, including three foreigners, Togo, Foch, and Joffre, on the honorary side.

Sir James Frazer has won for himself a quite distinct place by his study of myths, superstitions, and primitive customs of all the families of mankind, as they have been recorded by observers. These are recounted, in English of fine purity, in the twelve volumes of his *Golden Bough*. He has been a prolific, yet choice, writer for nearly 40 years, and the world of learning has waited to honour him.

Sir Ernest Rutherford, the director of the Cavendish Laboratory at Cambridge, is one of the world's greatest experts in the investigation of the atom. Sir Ernest is the youngest holder of the Order of Merit.

INSECT WAYS

Instinct or Intelligence?

CAN THEY HELP WHAT THEY DO?

Instinct or intelligence? That is the question which many naturalists have asked when inquiring about the minds and habits of animals, and it has been asked yet again by Mr. Balfour Browne in his Christmas Lectures at the Royal Institution about the nature of insects.

Among all the animals below man the insects, especially the bees, wasps, and ants, have seemed to approach nearest to having a real mind to guide their actions; but the lecturer, even while describing the houses which the mason wasps build of moist clay, would not grant them intelligence. They build their houses with great care, but they do all this by instinct.

They furnished the flat with food before laying the egg which was to live and grow into a young wasp while in the flat. It might seem impossible to deny that this is intelligence, but Mr. Balfour Browne said the wasp could never bring an intelligent mind to bear on anything which happened that was not according to plan. It was driven by some mysterious unknown instinct to go on as if nothing had happened.

Yet insects manage to do remarkable things with this inferior equipment of mere instinct. Another Christmas lecturer, Major R. E. Cheesman, in talking of the Wild Life of the Arabian Desert, described how the female giant water-beetles of the Hufuf Springs behaved to their husbands. The mother insect caught her mate unawares and stuck all her eggs in the middle of his flat back, and then turned him loose. Father water-beetle could not shake them off; he had to mind the babies, while Mother went off to further the emancipation of women. One water-beetle Major Cheesman found was a mere perambulator for no fewer than 90 youngsters flourishing on his back.

THE GREAT FLOODS

1925 COMES RAINING IN The Tremendous Rise in the Rivers

REMARKABLE SCENES

Floods on the coast, where the heavy tides were banked up by the gales, and such floods in the Thames Valley that the river authorities threw up their hands in despair and said they could not possibly cope with them—that was how the rainy year of 1924 went out and the New Year of 1925 came in.

The total rainfall for 1924 in London was just over 33 inches, and, though that is five inches less than the record of the rainiest year, it has only twice been beaten since the twentieth century began, so that we might expect heavy floods at some time in the year.

But these floods have been helped by a good many things. There happen to have been high tides to pour up the river estuaries when the flood waters were coming down, and the strong winds, especially the south-easterly gales, helped the Thames tides.

The Arctic Icebergs

The floods were very much worse than those which spread over the Thames Valley in January, a little less than a year ago. It is not unusual in England to have very mild, rainy Decembers and Januaries, with storms of wind and rain and flood havoc. These things are dependent on the course the great Atlantic cyclones take as they cross the ocean to Europe.

Whether they come far enough south to sweep the British Isles with rain depends on the position of the icefields and icebergs of the Arctic, and these have for twelve months been reported as coming unusually far south. It may be these which have produced not merely one of the most sunless summers in England, but, up to now, one of the rainiest winters. This much is certain, that floods making the Thames three miles wide at Chertsey and hiding Runnymede from view have happened before and will happen again. Bad as these were, the flood level in November, 1894, when the Thames was 13 feet 6 inches above its summer level at Wallingford, was not reached.

Amazing Figures

Still, the actual figures are sufficiently amazing. In one day the flow of water over Teddington Weir increased from 5700 to 6300 million gallons. Between Ilfley and Molesey, Father Thames may be said to have been blown from his bed, the rise varying from one to eight inches in 24 hours, making the height between six and 36 inches above summer level. At Charing Cross the water even invaded the Embankment.

Cross-Channel passages were delayed, incoming vessels reported thrilling experiences, and the lifeboats were busy all round the coast. From all over the country come reports of devastation by floods and by gales, reaching a velocity of 70 miles an hour.

Villages were isolated, postmen and tradesmen went their rounds in boats and punts. Houseboats were torn from their moorings. Bungalows were wholly or partly submerged. Cattle stood knee-deep in water-logged meadows. Outdoor sport was generally at a standstill, and flood water caused failure in the electricity supply. Mail and train services were much delayed. Snowstorms visited Scotland, Wales, Ireland, Derbyshire, and other parts of Britain.

Pronunciations in This Paper

Chimborazo . . . Cheem-bo rah-so
Diplodocus . . . Dip-lod-o-kuss
Ecuador . . . Ek-wah-dor
Gigantosaurus . . . Ji-gan-to-saw-russ
Iowa . . . I-o-wah

GOLD MEDAL TO FIGHT A FLY

NEW ENEMY OF THE MOSQUITO

Science Organising Its Forces Against a Little Pest

HOW HE WORKS

By Our South Kensington Correspondent

The first official act of the new College of Pestology (which is presumably to study the pests that abound about us) has been to offer a gold medal for the best essay of 500 words on how to stamp out the mosquito and the house-fly, two of the worst enemies of man.

We have therefore asked our South Kensington correspondent to describe the work of the mosquito in England.

For years there have been mysterious deaths in England from the bite of mosquitoes. Two mosquitoes are the offenders, but fortunately for us the malaria mosquito, which goes by the name of *Anopheles*, does not often bite in England, except in the low-lying fen counties of the east coast, and there malaria is quite common.

Carrier of Deadly Disease

The mosquito which sometimes gives us blood-poisoning is a more common insect, and often bites us during the summer. Its scientific name is *Culex pipiens*, and it may frequently be seen in meadows, by streams, and under hedges; in fact, we meet it almost everywhere during the summer months.

This mosquito may pick up the deadly disease of *septicaemia* in many places, such as stagnant pools, dirty water-butts, flowers that have been watered with liquid manure, and in dirty and unhealthy spots that it frequents.

It feeds, let us suppose, from the scum of a badly-drained pool which has been stagnant for years; and then flies off. Some time later it may alight on some unfortunate person and bite, and as it plunges its proboscis into the skin of its victim the dirt and filth which has encrusted on it is washed off in the blood, and the germ of *septicaemia* is introduced into the human system.

Safety in Good Health

Now, this does not necessarily mean that the person will get blood poisoning, for if he or she be in good health they will throw off the evil effect of the germ and be none the worse for their having been bitten, but should they be in a low state of health they will probably be very ill.

Many people think a mosquito stings, but this is not so. As a matter of fact, only the wasps and their allies sting. The mosquito has a highly-developed mouth, and it is worth while examining the weapons with which it causes so much trouble.

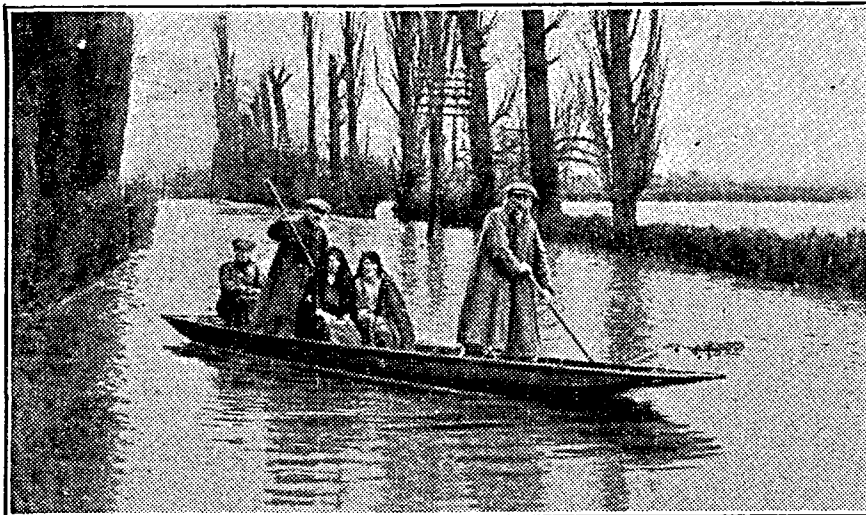
The mouth consists of many long, slender, piercing implements, which are designed specially for cutting thick and tough skins or hides. These slender lancets work rapidly up and down with a sawing motion, and in a very short time have cut a small but deep wound in the skin of their prey.

What Causes the Swelling

The mosquito then pumps saliva through a tube, by means of a mechanism like a hypodermic needle, which, with the rest of the mouth, is buried in the victim. This saliva makes the thick blood very much more liquid, so that the insect can suck it up quicker, and nearly always some of this saliva is left in the wound. This it is which causes the swelling and irritation that so commonly follow the bite of mosquitoes.

The best way of getting rid of these pests is to pour a little paraffin containing a small amount of castor oil on to any stagnant water near the house. This kills the larvae. But it is nicer if one can stop them from biting at all; and a little citronella oil smeared over the face, wrists, and ankles will effectually prevent any unwelcome attentions from mosquitoes.

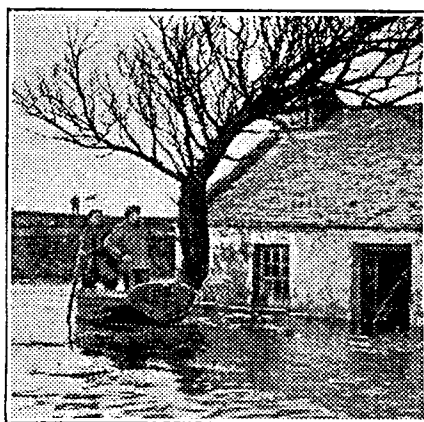
ENGLAND UNDER WATER



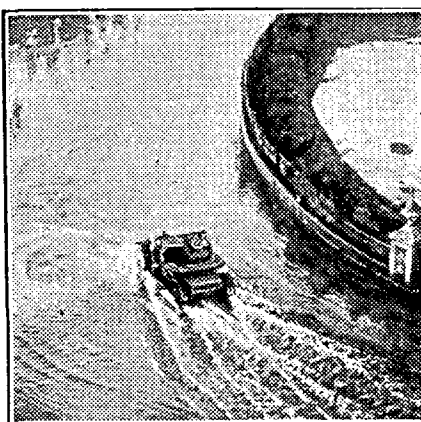
Going to market by boat at Shepperton, Middlesex



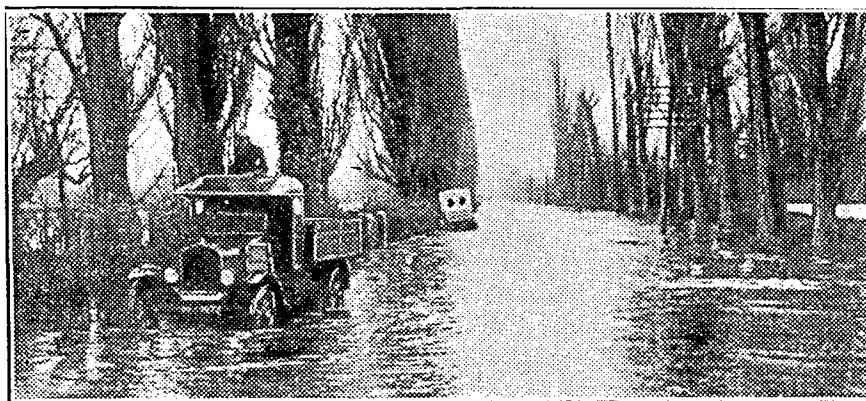
A motor-bus on the Weybridge Road, Surrey



A flooded farm at Malldraeth Bay, in the Isle of Anglesey



Motoring on a flooded road at Bognor, on the Sussex coast



Disabled motors on the Shepperton-Weybridge main road

Extraordinary scenes have been witnessed in different parts of England, where rivers have overflowed their banks to an alarming extent. This has been due partly to heavy rains and partly to abnormally high tides and strong winds blowing the water up the river estuaries

JUST IN TIME

Why a Farmer Ran a Mile SAVING A TRAINLOAD OF LIVES

The great storms which blew out in furious tempest the last week of the old year, and carried flood and destruction far and wide over the British Isles, brought about many strange situations, and at least one of remarkable presence of mind.

An Irish farmer saw a railway accident coming, knew that it must come if there were none to prevent it, and ran a mile to stop it. He was in time; he saved a number of lives. If not a heroic deed it was truly a remarkable one.

It happened in this way. The great storm washed away the embankment for a hundred yards on a branch railway line between Armagh City and Keady. The rails were poised in the air, with nothing substantial to support them.

A farmer, Peter Mackey, saw the situation, and instantly perceived the frightful disaster that would overtake the passenger train which was soon due when it reached the suspended rail.

He looked once and looked no more, but burst away as fast as he could run for the nearest station at Ballyards, a mile off, to warn the station-master. He was just in time. The train was stopped before it reached the gap.

Had it got there it would have plunged forty feet below into the hollow, taking with it a trainload of holiday-makers from Armagh.

OUR QUARREL WITH A BEETLE

Government's Move Against Him

STORY OF A COLORADO PEST

The Ministry of Agriculture has taken up the cudgels against a small but dangerous adversary, and has opened the fight by issuing the Colorado Beetle Order of 1924, under which the importation of potatoes grown in the United States is prohibited.

This pest is only about the size of a finger-nail. He must be rather proud of having an Order of a British Government Department all to himself, but it would be wrong to make light of him because he is such a little fellow.

He was discovered in 1824 by Thomas Say in the far west. By 1859 he had made such progress as to destroy the entire potato crop in certain parts of America. Travelling steadily eastward, he reached the Atlantic in 1874, and took ship for Europe, arriving at Liverpool in a cattle-boat in 1877.

Fortunately he was discovered and dealt with, and a strict law was passed prohibiting people from keeping him, but, as he and his family live in the potato tuber, we shall find him settling down among our own crops if we do not keep American potatoes out of the country.

THE LOST CHORDS OF NOTRE DAME

Sad State of a Famous Organ

" FILLED WITH DUST AND DEAD BATS "

Everybody has heard of Notre Dame de Paris, the lovely cathedral which is the noblest sight in the French capital, and the thousands of strangers who have seen it, in the gay sunshine or under the Moon, will grieve to hear that the organ of Notre Dame is in danger.

This magnificent instrument, venerable in age, but built to last for ages, was rebuilt 56 years ago. The organist, M. Vierne, says it is falling into ruin. " It is filled with dust and dead bats and swallows," he says, " and is perishing from mildew and rot."

The organ of Notre Dame has a dozen keyboards, with 86 keys and 22 pedals. It should be overhauled every ten years, but has not been cleaned since 1894. Perhaps some of those who have come from distant lands to delight in its sweet music will find the money to put it in order once again.

YA SOLMAN THE ARAB IN ABRAHAM'S BIRTHPLACE

A Tale Told by an Old,
Old Wall

THE DIGGERS OF MESOPOTAMIA

Every day the papers introduce us to somebody new. Today it is Ya Solman.

He is a digger at Ur of the Chaldees, where 200 men are digging up Abraham's birthplace, and this is what Mr. Leonard Woolley, who is in charge of the excavations, says of his men, especially of Ya Solman. We take it from The Times.

These Arabs of Southern Mesopotamia are decent fellows and good workmen if duly supervised. We work them in small gangs composed of a pickman (the aristocrat of his profession), a spademan, and two or three basketmen.

All the men are paid the same wage, but the pickman has far more chance than the others of finding objects, and therefore of gaining baksheesh; for every object worthy of being kept the finder receives a small reward, and, though he may have many barren weeks, there is always the chance that something may turn up that doubles his wages.

The Pride in the Wall

If he breaks the thing he loses his baksheesh; consequently he must be careful; but the more earth he shifts the greater his chance of a find, and therefore he has an extra incentive to work hard.

These fellows are more intelligent than the fellahin one employs in Egypt, and they develop a quite remarkable skill in their trade, and, unlike the Egyptian, a pride in the work for its own sake.

Last year we found a wall of mud brick decorated with niches and half-columns; the irregular face was very difficult to follow, but the pickman who first detected its curves was able, with infinite pains, to preserve not only the mud plaster that covered the wall, but also the whitewash which, after 2500 years, clung to it. He would dig down close to the face, leaving an inch or so of earth adhering to it, and then, using the point of his entrenching tool as a scalpel, detach this bit by bit.

The Workman in Tears

Naturally progress was slow, and, impatient to get on with the plan of the building, I told the foreman to set a couple more gangs on.

He did so, but came back saying, "It's done; but you have upset Solman," he says that he never asked to be put in a good place, and he doesn't want baksheesh, but this is his wall, his columns, his whitewash, and he doesn't see why they should be taken from him."

I went to the spot and found Solman working with a very glum face, casting an occasional look of hatred at the two gangs ahead. "Ya Solman," I said chaffingly, "I hear that your pleasure in life has gone"; but I felt a brute when the Arab looked up at me, and then, covering his face with his cloak, burst into tears!

With such a spirit among the men one can tackle anything.

And they are a cheery lot. There is plenty of singing at the work, and sometimes, when it is merely a dull matter of shifting dirt, the whole thing will develop into a game.

Pay-Day

On pay-day the entire gang will do a war-dance from the site of the dig down to the house, where the chairs are set out in the open and soup plates full of coins and notes cover the table; even the longed-for moment of receiving the week's wage may be postponed for a while for the last wheeling movement of the dance to be finished.

And it is no rare thing for one of these rough and poverty-stricken Arabs, if he thinks that there has been a mistake in his account and he has received too much, to come back and lay the money on the table saying he has not earned it.

THE BULL THAT WOULD NOT GO TO MARKET

Something Like a Holiday

A TALE OF THE GREAT THAMES FLOOD

There is an Aberdeen-Angus prize bull by the Thames which is looking back to the festive season with pride and satisfaction, tinged, perhaps, with something of that Boxing Day feeling that comes after having had a little too much of a good thing, or things.

Sandy, the Aberdeen-Angus, was being taken with due pomp to the show at Kingston market, where it was expected that he would acquire a decoration of at least a red rosette, when he saw the Thames running freely by. He joined it. Breaking away from the herdsman, he plunged into the flowing tide. The river was swollen with the rains. It was too much for Sandy, and took him a mile down-stream.

Winded but not discouraged, he scrambled ashore at Hampton Wick, and then gave himself up entirely to the holiday spirit. He had landed on the pleasant lawns of the Grove, where there was none to dispute his right except a housemaid and an errand boy. He chased them both out of sight.

The owner of the Grove summoned the neighbours, and with memories of the Wembley rodeo in their minds tried to lasso the bull. But the Aberdeen-Angus was not a prize bull and a Scot for nothing. Each time the lassoing party advanced the bull advanced also. It was the bull who remained, holding the ground won.

A Night Raid

The shades of night fell. A last attempt was made with lanterns and boat-hooks wielded by the neighbours. The night raid failed. The owner of the Grove retired to his household defences, and the last that was seen of the invader was a shadowy form whirling a triumphant tail in the darkness.

Morning came on a scene of confusion. The Aberdeen-Angus had dug up the lawn and trampled the flower beds, and was as defiant as ever. The local police came; water-bailiffs came; herds-men came. The bull surveyed the new army with dull disfavour, and plunged into the river again.

The owner of the Grove breathed a sigh of relief. Not so one of his neighbours, for the bull got out of the Thames once more and came ashore in another garden to resume hostilities. It proved impossible to corner him; and, like the famous Boer leader De Wet, he was never really captured. It was not till late in the day that he gave himself up.

SPENDING £14,000,000

Bold Scheme on the L.M.S.

HUGE RENEWALS OF TRAINS AND RAILS

One would think that a decision to spend 14 million pounds on the renewals for a single railway company would make a big difference to unemployment.

That is what the L.M.S. Company has decided to do, but we are told that when it and the other companies launched similar schemes less than a year ago their effect on unemployment was hardly noticeable.

They would have been more helpful earlier. The money has been there in reserve—sixty millions were given by the Government over two years ago to make up war wear and tear—and reserves have been piling up. Why?

Anyway, it is impressive to think of orders for 235 locomotives, 2591 passenger coaches, 30,000 wagons, and vast quantities of rails and sleepers, to say nothing of strengthened bridges, repaired and repainted stations, and the rebuilding of many others. Let us have more of it.

MILLIONS FOR POSTAL MEN

War Bonus at Last

LONG DISPUTE ENDED

At last the long dispute over the war bonuses of Government servants is ended, and about 20,000 postal workers will get an average of £100 apiece.

When the war broke out the Government promised all employees who volunteered for the Army that their places should be kept open for them and their wages go on as usual. When the increased cost of living made it necessary to give war bonuses to Government servants the men who had joined up claimed that they ought to have this too.

This the Government disputed, and the question was decided in the Law Courts. When the Court of Appeal decided in favour of the men the Government decided to submit, and not to appeal to the House of Lords.

So now the Post Office men and a great many other Government servants as well have, in addition to their pay as soldiers and Government servants, the bonus given to home workers as well. The total cost is estimated at from three to four million pounds.

KEEP THE MEAT CLEAN

A Warning to Butchers and
Their Customers

WISE STEP OF THE MINISTRY OF HEALTH

It is surprising how many people buying meat at the butcher's seem to think they cannot choose a piece properly without turning several pieces over with their hands. The Ministry of Health is trying to stop this dirty and dangerous habit.

It is no use making a law against it because the law could not be enforced, but it asks butchers to put up a notice in their shops against it, and it asks customers to refuse to buy meat at shops where it is allowed.

The Ministry has issued a number of other regulations providing that meat shall be kept cleaner than it is. Market stalls must be made so that the meat is protected from mud splashes, counters and implements must be kept clean, men in the wholesale markets must wear overalls, and the authorities in the country are given the same powers to inspect slaughterhouses as the town authorities have already.

One would have thought that all this would have been done long ago, but better late than never!

THE MELTING GLACIERS

Farms and Forests Swept Away

A strange natural occurrence, unique so far as America is concerned, has lately led to great damage.

Mount Shasta, in California, is an extinct volcano 14,380 feet high, whose slopes are covered with glaciers fed by snow from the upper reaches. The hot summer had melted much of the snow and ice, and the water, mixing with the loose dust and earth on the lower slopes, formed a torrent of thick mud, which came pouring down the canyons, either burying what lay in its path or carrying everything before it.

Boulders were tossed about like twigs on a mountain stream, the rocky walls of canyons were torn away, huge trees were brought up by the roots, and acres of farm and timber lands were overwhelmed.

The mud was as thick as newly-mixed cement and at night its surface dried into a thin crust, which deceived many people into thinking that the whole was solid. As a result a number of cars which started to run over the mud sank and had to be dug out.

The strange river was three-quarters of a mile wide, several miles long, and about eight feet deep.

GOLDEN GATES OF A LONELY LAND

A NEW DISCOVERY

Unexplored Territory 500 Miles
from Montreal

PART PLAYED BY THE SEAPLANE

Vast possibilities of wealth for Canada have been opened up by the discovery of a new goldfield in the northern district of Rouyn, where the provinces of Quebec and Ontario meet.

It is a lonely land of forest and river and lake, deep in snow during the long winter, and unexplored for the most part. But the railway runs to within 50 miles of it, and the town of Haileybury is now a jumping-off point from which a regular service is maintained by seaplanes to Rouyn township. Gold is opening up this lonely land.

This year the railway line will be extended to Rouyn itself. Meanwhile, the seaplanes from Haileybury take only an hour to do the journey that, without their aid, would occupy three days of travel by canoe along lonely rivers, with arduous portages. Seaplanes are chosen because the ground landings are rough and unprepared, while there are excellent water landing-places on the countless little lakes in this region. And the seaplane will play an important part in the development of the rich mining lands farther north, which were recently reported by a scientific exploring party to be of inexhaustible wealth.

A Rich Prospect

Rouyn is 500 miles from Montreal, and will soon be within 40 hours direct railway journey from New York. This does not mean, however, that all comers will find a rich harvest in the new goldfields. There is no surface gold in the Rouyn area. Expensive processes of diamond-drilling and cyanide extraction are needed before the precious metal can be won from its quartz bed, and the machinery and organisation required to work the deposits can only be provided by the expenditure of large sums of money by capitalists. Yet there will be work for willing hands to do, and the chance of a modest fortune for all who care to work hard.

The Rouyn district is not outside the pale of civilisation, although so much of it is unexplored. Work in the mines can be carried out all the year round, and the wealthy financiers who are engaged in opening up the district will see to it that sufficient comforts and conveniences are provided to make permanent settlement possible.

WORLD'S WHEAT KING

What He Owes to His Wife

The story of Mr. L. C. Mitchell, the Canadian farmer who has just won the World's Wheat Championship at the Chicago Exposition, is very interesting.

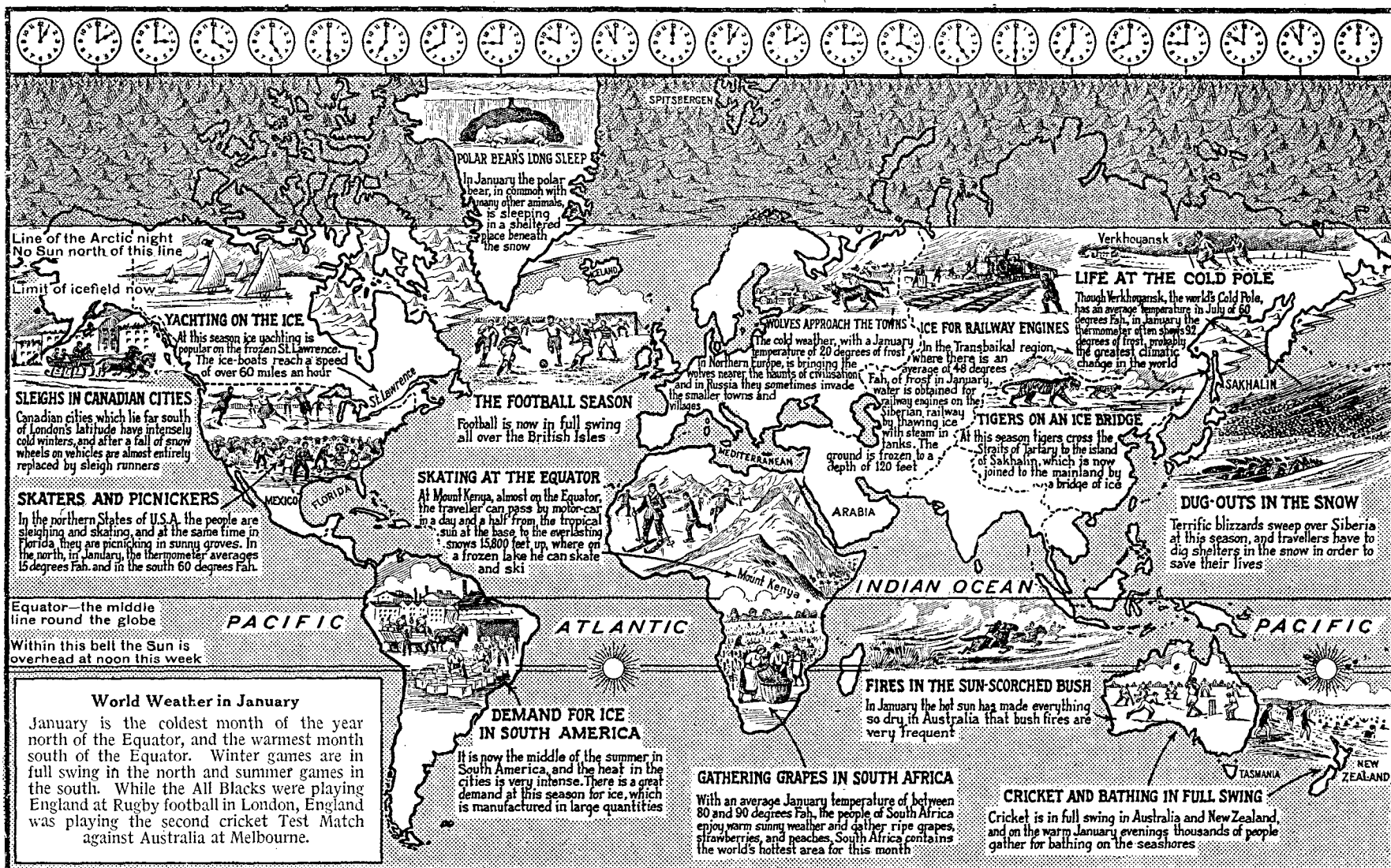
Seventeen years ago he was working in a Manchester cotton goods factory, but in 1908 he emigrated to take up a homestead on the prairie.

Mitchell had to work many times harder on the land than at the spindles, but he plugged away in dauntless fashion until this summer he grew the bushel of wheat which took first prize among nearly 600 entries and crowned him World Wheat King.

Had it not been for his wife Mitchell would never have won the silver cup emblematic of the wheat championship. While the wheat was in stook he had to go to the city on business. A rain-storm struck the farm and threatened to drench and toughen the precious grain. Mrs. Mitchell hurried out and covered a few of the stooks with waterproof sheets, and it was from these stooks that the winning bushel came.

Incidentally, Canadians have won this trophy 13 times in the last 14 years.

PICTURE-NEWS AND TIME MAP SHOWING WEATHER ALL OVER THE WORLD



BLINDFOLD CHESS A Boy Who Plays it Well HOW IS IT DONE?

A blind boy, Rupert Cross, has been playing in a boys' chess tournament in London, and he did very well in the competition.

He is a pupil of the Worcester College for the Blind, and has competed before in chess tournaments. Already his teachers think him promising, though he is only twelve years old. Perhaps he may become one of the Chess Masters.

But he does not play as the great ones among them play blindfold chess. He has before him a small board in which the chessmen are pegged in; and as the moves are called, and the pieces moved, his hands move over his little board and he recognises where King and Queen, Knights and Bishops, Castles and Pawns are situated by touch.

Nevertheless, just as the Chess Masters do, he must have a picture of the board and its pieces in his brain. One of the great English Masters who has sometimes played several games at a time blindfold, tried to explain to a member of the C.N. staff how it is done. Suppose, he said, one were thinking of going from Farringdon Street to the Mansion House. One would draw up in one's mind a little plan of the streets and the way one would take—a little way to the left, then another straight march to the left, then a bend to the right, and so on.

In the same way a chess player can keep a complete plan of the board and every square in his mind, and can follow and remember the streets and turnings that the pieces follow.

TONS OF FLIES

The motor liner Rio Panuco arrived the other day at Plymouth from Mexico with 13 tons of dried flies among its cargo. These flies contain a brightly coloured pigment, and are used in the manufacture of paint.

THE SHARK'S HOLIDAY Coming North for Food

Off the coast of Normandy, which is seldom disturbed by any invasion more terrifying than a shoal of sardines, a pack of hungry sharks have descended for their winter sports.

They are not man-eaters, which are seldom met with except in books of adventure, but the sharks which have appeared near Cherbourg will eat anything else.

One of them, the Captain Hook of the crew, has installed itself near the seaport and levies a piratical toll on the fishermen's nets, carrying away hooks, lines, and even an anchor. Such a shark would not hesitate at a clock.

But the band have really come for the herring, and their appetites are enormous. They have almost sent up the price in the local markets, so much have the fishermen's catches diminished. One of the sharks entangled itself in a net and the fishermen got to work on it with oars and boat-hooks. But it was too much for them; the shark got away and lives to prey another day.

It is thought that the very mild December brought the sharks north to seek their food.

THE PRIDE OF TOIL France Honours Two Workmen

The French President has made an excellent new departure in the bestowal of honours for services to France. He has made two workmen in French arsenals Chevaliers of the Legion of Honour, France's most prized decoration.

These men, Gerbaud of Toulon and Quillien of Brest, were distinguished for long, faithful, and efficient service, and in honouring them it is sought to honour also all humble and steadfast workers in their country's cause. Hitherto the Legion of Honour has been given only for special acts of heroism or distinction.

THE BRAVE DOCTOR One More Victim of Street Chaos

Two doctors walking in the streets of London have been killed by motors, one outside his home and one crossing Victoria Street.

It was Dr. Edgar Chatterton who died in Victoria Street, and as he lay dying under a motor-bus he said to the driver, "Very sorry, old chap"; and then, "Don't let them blame the driver. It was not his fault."

A friend writes these notes of this brave and good man who has become a victim to the shameful traffic chaos of our streets.

Dr. Chatterton never had a thought for himself, and even on his dying bed in the hospital said to the nurse, "I am sorry to trouble you." His heart was bleeding for other people's sorrows. He was a doctor, but to how many was his face lighted by a sympathetic smile of consolation in times of physical and other calamities.

His was a great understanding of the need of affection there is in every human heart; his was a great sorrow for his many aged women patients.

His modesty about himself was often touching. No ugly thought ever crossed his mind. He always saw the best in people, and he was only sorry for those whose ugly deeds he attributed to the struggle and the strife of their lives.

He was a real English gentleman. He had no prejudices—all foreign races, especially those of the East, were to him a source of attraction and interest. His life will leave a lasting memory in the hearts of those who knew him and his influence has probably made many people better.

In the Auction Rooms

The following prices have lately been paid in the auction rooms for objects of interest.

A pair of Chinese vases . . .	£460
A pair of Worcester vases . . .	£300
Drawing by Birket Foster . . .	£210
A French bureau bookcase . . .	£135
Two Chinese pottery bowls . . .	£100
An old Worcester mug . . .	£56
A Stuart needlework picture . . .	£30
A George III snuff-box . . .	£25

THE PENSION ROLL Britain's Huge Bill for War Victims THE TAX THAT GOES ON FOR OUR LIFETIME

What a world of misery and grief is represented by the annual return of pensions for war victims and their dependants! We are still paying over 72 million pounds a year under this head; once it was 106 millions.

The total will gradually grow smaller and smaller till, when people now young are old, it will disappear altogether—if there is no new war! Death must be the main cause of reduction as time goes on, but there are other and happier causes.

Of the allowances to widows over a third have already been cancelled by remarriage. Considering the early age at which the bulk of these women lost their husbands, this is a natural and happy thing to happen. Happier still is the large number of disabled soldiers who are gradually being restored to health and activity.

The reductions in the figures from these causes would be greater were it not for the fact that each year even now there are large numbers of fresh applications for pensions and allowances. Last year there were over 57,000, and of these 18,000 were granted, 6685 on account of fresh deaths.

Altogether four and a half million people have benefited from the fund. The present number of pensions and allowances is 1,130,000, a reduction of nearly 60,000 in the year.

A YEAR'S BOOKS

Year by year the records of the production of books are broken, and last year proved no exception.

The returns for 1924 total 12,706 books, which is considerably higher than any previous record made in Britain and shows a remarkable increase on other years. Nearly a quarter of this output is fiction, and juvenile literature comes next, with a total of 1016.

CHILDREN'S NEWSPAPER

JANUARY 17 1925

It Wouldn't Have Done

ON a cold, dark night not long ago a poor old man of eighty fell into a Hull dock. His cries drew a crowd to the edge of the dock. A young man of eighteen, who was not a good swimmer and was not strong, plunged into the dock, fully dressed, and brought out the old man, who, however, did not survive the shock.

At the inquest the coroner praised the instant bravery of Frederick Elliott, the young rescuer, and he, shaking his head at the compliment, modestly said: "It wouldn't have done to have left that man in the water."

What a homely but splendid thing to say—*It wouldn't have done*. All kinds of goodness are enshrined in that simple speech.

Things we might do, things we may even be tempted to do, abound in the world, but we pass them by at the bidding of the inward warning: *No, it wouldn't have done to do that*. And things need doing, an abundance of things, of which the voice of honour within warns us that *it will not do to shirk doing this right thing*.

That boy of Hull responded instantly to his inward standard of what his manhood required of him. Less than that prompt response would not do, though certain danger, and very possibly death, were risked. The essence of noble conduct has never been more finely condensed into bold act and modest speech.

To every one of us this fine deed should come as an inspiration to keep clear and sharp in our natures right instincts as to what will do and what will not do if we are to live up to our full manhood, or full womanhood.

It is not only in great heroisms, involving grave issues, perhaps of life and death, that this question of what will not do arises; it is present in an infinite number of small decisions in which we can daily practise ourselves in what is right, honourable, kind, and wise. That is how an instinct which is true is built up within us and becomes ready to serve us in any emergency.

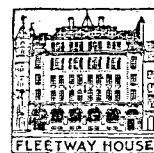
No doubt there are moments of inspiration when very noble impulses come to us. The Hull hero felt something of this; for he said he felt that what he was doing was *in higher hands*. But quick sensitiveness to the highest duty is the natural way in which character is built up, and character is the power that rules the world, in individuals and in nations as a whole. Character is the sense of knowing what will not do, and what must be done, and of acting accordingly. It would not do for any of us to fail in character.



THE EDITOR'S TABLE

Fleetway House, Farringdon Street, London

above the hidden waters of the ancient River Fleet, the cradle of the Journalism of the world



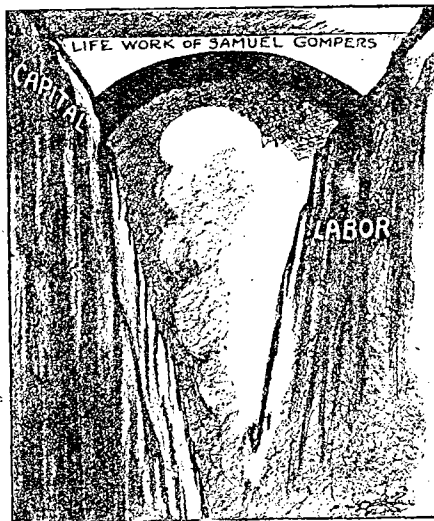
A Sad Mistake With a Happy End

A HAPPY ending has just come to an old mistake.

Mr. Benjamin Bathurst has lately published the correspondence of the two daughters of James the Second, both of whom were to wear the English crown in turn.

Now there was once a historian who thought that one of Mary's letters, complaining of cruelty and disloyalty, was addressed to her husband, William of Orange, and people began to believe that their marriage had been unhappy and a mere matter of politics. Mr. Bathurst has now proved that the letter was really addressed to one of Mary's girl friends.

It is pleasant to know that the older tradition was right, and that the famous marriage united hearts as well as States, and it is good to have an error put right, even after so many days.



What a Slum Boy Did

Is there not a whole biography in this cartoon summing up the life of the famous Labour Leader who has lately died in the United States? The man who builds a bridge like this is truly worth remembering, and his works live after him. Samuel Gompers was an East End boy, and London, which gave him a slum to be born in, may well be proud of him.

Sir Thomas More Breaks the News

WHEN Sir Thomas More was Lord Chancellor he used to carry the cross at the head of processions round Chelsea Church, and sing in the choir wearing a surplice like other choristers. The Duke of Norfolk was shocked at this, and cried: "A parish clerk! You dishonour the king and his office." But More continued to serve his God as well as his king.

When service was over, and More had left the vestry, a footman used to go to his wife's pew and say, "His lordship is gone." His wife was ambitious, and liked such attention. After his fall, More did not know how to tell his proud wife that he had resigned the great seal of England, but in the end he broke the news by coming to the pew himself, and saying: "May it please your ladyship, my lordship is gone."

So did he give up greatness with a jest, as he was one day to give up with a jest even life itself.

The Old Days We Were Born In

WHEN we think of the millions of motor-cars now running in America it is strange to remember that it was only the other day that the following law was removed from the records of the State of Iowa:

The travelling motorist is ordered to telephone ahead to the next town of his coming, so that owners of nervous horses may be warned in advance.

Truly the days we were born in are beginning to seem old.

Tip-Cat

A DONKEY has been found grazing on top of a Welsh mountain. Evidently fond of high living.

CHILDREN should be taught to put something by for a rainy day. Even if it is only an umbrella.

FRANCE can now stand alone, we read. We are delighted. We shall be very glad when she can pay a loan.

THE face of the old clown, we are told, has had its day. Well, he has always done his best to deface it.

WEDDING CAKE, we are told, has gone out. Probably because everybody cut it.

A WRITER suggests that the Ten Commandments were meant only for the Jews. That is what some Gentiles seem to think.

THE Bank of England is being rebuilt. We wonder who broke it!

SIR JAMES BARRIE defines genius as "knowing how best to crack your walnut." And come out of your shell.

The Gipsy's Motor-Car

AN Englishwoman visiting the United States noticed that outside almost every town there was a great enclosure of Ford cars. At first she thought it was a place where tourists parked their motors, but she was told that it was a camp used by "the Ford tinkers."

These are people, usually from the east of Europe, who cannot settle down or make good in American cities. So with a few household belongings and their tools they wander about the country doing odd jobs of every sort. One man carries a little printing press. They pay no rent or rates, and undersell cobblers, tailors, and hairdressers who do. They are free as birds, and see beautiful country.

A Ford car is cheaper and more efficient than a horse and caravan, but not so picturesque. Will any George Borrow be able to write a Lavengro about the Ford Tinkers?

The World in 1000 Years

By the C.E. Post

The C.N. Monthly (My Magazine) is publishing the opinions of the Children's Encyclopedia Men on Life as it will probably be in 1000 years.

A THOUSAND journeys round the Sun!

What profit when their course is run?

Will men be taller, women fairer, Work a joy, and trouble rarer?

Will young and old ascend the sky,

And never walk when they can fly?

Will those who travel, while they roam

Be wirelessly to the sights of home,

See before them as they pass The face of love in a magic glass?

Will Peace make fair the ways of Earth

And set men free to conquer dearth?

Will Beauty love with men to dwell

Because they learn to treat her well?

Will life be bright, and all its hours

Be gay with music, bright with flowers?

Will space be bridged, and flying cars

Tempt folk to spend week-ends in Mars?

Will men of strange and fearful pattern

Invade our sphere from ringed Saturn?

WHATEVER our hopes, whate'er our fears,

Old Earth must change in a Thousand Years!

O Time! whose instant is an age,

Write what thou wilt on our Earth's page,

But leave men Love, and leave them Tears

To cleanse their hearts in the changing years!

Sixteen Stone Goes Walking

By Our Country Girl

ONE of our friends weighs nearly sixteen stone, and no amount of exercise can abate it. Yet he has a prodigious appetite for striding about England. Only once has he been known to join in the old complaint against milestones—"hateful, unsociable things! You never see two together."

It was during a walking tour in Dovedale. All day long he had been marching, but a false short cut had brought him trouble, and at sundown he arrived not in the town of B., but the little lost hamlet of C.

On inquiring at the first cottage, he learned that B. was six miles off. He felt no more capable of walking six miles than of swimming the Channel. Glancing about him at the handful of humble dwellings, he asked hopelessly if there was a car or a horse and trap to be hired.

The old dame stared at the big stranger, and then she said:

"You'll find some donkeys next-door, but I pities 'em!"

GREATEST REPTILE EVER SEEN

GIGANTOSAURUS

Digging Him Out of the Earth
in Tanganyika

THE LAND OF THE GREAT DEPARTED

In Central Africa, near Lake Tanganyika, lie the bones of the greatest reptile that ever wallowed in the marshes, perhaps the greatest animal that ever stalked the Earth.

The Germans who found the remains of this fearsome beast, which is rightly named Gigantosaurus, made some attempts to measure it, but the war descended on their peaceful labours before the whole skeleton could be dug out, and so we can only guess at its size by a comparison with the Diplodocus, which stretches its jointed backbone over 80 feet of one of the galleries of the Natural History Museum at South Kensington. The upper part of the flipper or foreleg of Diplodocus, which might be called its shoulder-blade, measures about three and a half feet. But that of Gigantosaurus, which is built on somewhat the same lines as Diplodocus, is seven feet.

Scientific Responsibility

England, which has taken over the duties as well as the rights of Germany in Tanganyika Territory, has also in a modest way assumed the scientific responsibility of digging out Gigantosaurus, but the British Museum has no such funds for pursuing the search as were given to the German geologists, so it may be a long time before the Great Departed of the Age of Reptiles comes to town.

An expedition under Mr. W. E. Cutler is at Tendagru, 50 miles from the coast, and it has found many bones of enormous size, as well as bones of other Dinosaur reptiles, and fossils of mammals and birds. But it will be a very difficult task to get these weighty remains to the coast unless some benefactor of science pays their fare by motor-car. In the C.N. lately we described the motor caravan that brought many tons of fossil reptiles to their last home at the University of Utah. Transport of the same kind is wanted for the Tanganyika bones.

Bones Ten Million Years Old

It is not merely the giant size of these ten-million-year-old bones which makes them interesting. The importance of them goes far deeper than that. When the geologists first began to seek these great Dinosaurs the biggest cemeteries of them were found in North America. The simplest reason for that was that the American geologists had more money to spend on finding them. For a time these reptile regions in Wyoming were regarded as the chief home and birthplace of the Dinosaurs, but the American geologist and zoologist, Dr. Fairfield Osborn, and his fellow-workers urged that search for the same reptiles should be made in Asia.

The result of this suggestion was that a motor-caravan expedition was sent into the Mongolian desert, where, besides many Dinosaurs, some astonishing Dinosaur eggs were found. In one of them, as told in the C.N., was a tiny unhatched Dinosaur less than a foot long.

The Wandering Dinosaur

That famous discovery helped to show that the Dinosaurs wandered millions of years ago between North America and Asia, and grew up and developed in both countries for millions of years before the sea or some other cause cut them off from one another.

If Dinosaurs and similar reptiles, some of them the same and some of them larger, are found in Africa, the discovery raises many questions of exceeding interest. Did the Dinosaurs come from Asia by way of Palestine,

Two motor-cyclists have crossed the desert from Cairo to Siwa and back (1200 miles) in 14 days.

Of the 200 million acres of land cultivated in India over 50 million acres are irrigated.

The Ways of the Weather

On one day recently snow and frost were reported from Bagdad and unprecedented warmth from Siberia.

Wireless at School

The L.C.C. Education Committee will permit wireless in elementary schools, and, where it is used for strictly educational purposes, will pay for the licence.

Forgetting Baby

Accidentally left in a carriage at Paddington just as an express was starting, a baby travelled to Reading and was returned to its mother safe and sound three hours later.

Miss Jane Pearce, of Bristol, has been 84 years in the service of one family. She is now 98.

A garage near Bishop-Auckland was burned out through a lady throwing a burning glove on the floor.

Seven Half-Centuries

The publishing firm of Horace Marshall has seven men on its staff who have been with the firm half a century.

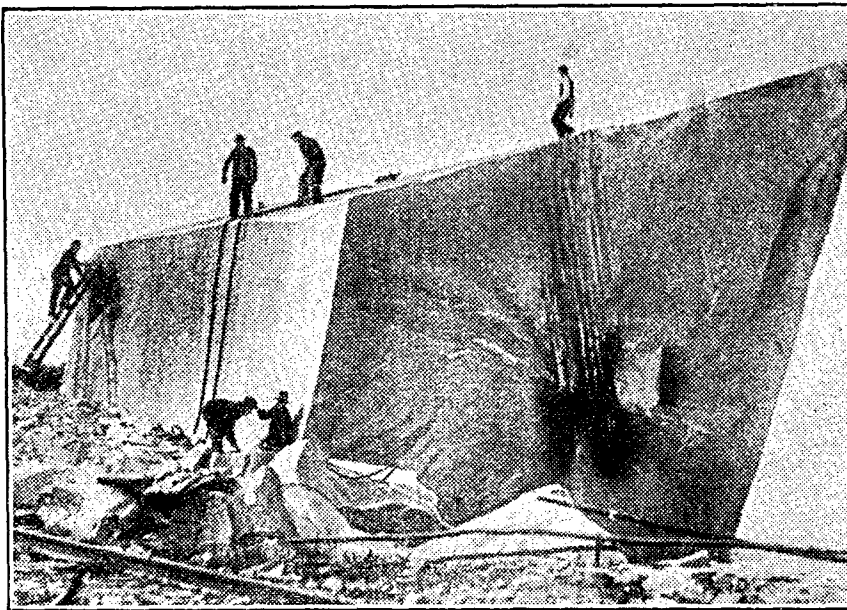
America's Macaroni

The United States is now producing 500 million pounds of macaroni a year, whereas fifty years ago the industry was unknown.

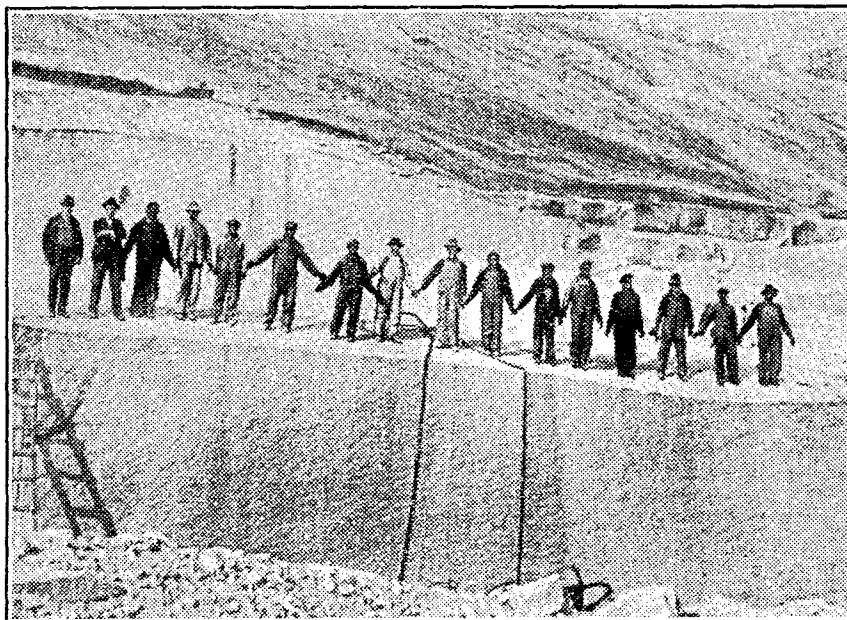
The World's Largest Gas Engine

The world's largest gas engine is being erected for the Staveley Iron Company in Derbyshire. It was made at Liège, in Belgium, and the crankshaft weighs eighty tons.

AMERICA'S BIG STONE



Quarrymen at work on the big stone



A row of workmen standing on the stone

The pictures show a huge block of granite that has recently been quarried at the Stone Mountain Quarry, Atlanta, U.S.A. It is said to be the biggest mass of granite ever quarried and weighs about 17 million pounds. It is 40 feet high and contains 100,000 cubic feet

or Sinai and Egypt, as the elephant did? Sir Harry Johnston, who has studied the animals of Africa for nearly 50 years, believes that many of the greater mammals came that way, and then, with all Africa to roam in undisturbed, grew larger and larger. Perhaps the same growth in size took place with the giant reptiles, which may have followed the same path. Some of them, like Gigantosaurus, grew so large that the clayey swamps where they wandered sometimes gave way under their weight, and they perished by suffocation.

Till all the remains are collected and examined the migration theory is not proved. Africa is so great in size that its areas of life are widely separated

from one another. The life of Madagascar is altogether different from that of Tanganyika, and both are different from those of West Africa and Egypt, or Morocco and Algeria. Abyssinia is different from the rest. So perhaps the Gigantosaurus did not emigrate to Africa, but began there.

There is another sense in which Africa is the land of the Great Departed. Sir Harry Johnston says that its great animals are being gradually destroyed. Since he went to Africa, 44 years ago, the lion and the leopard have fled from Tunis and Algeria. In another forty years, at the present rate of extermination, all the African great mammals will have gone into museums.

A TASK FOR THE NEXT GENERATION

WHO SHALL TAKE DOWN
THE DOME OF ST. PAUL'S?

The Danger in Which Our
Noble Monument Stands

ITS WEAKENING FOUNDATIONS

Must the dome of St. Paul's be taken down and rebuilt, or can it be made safe without? That is the remarkable problem which a commission of experts has been considering for many months.

Now it has made a report. The dome may have to come down some day, but for the present, at any rate, the strengthening of the eight great piers which support it should suffice.

These piers look so solid and strong that it seems as if they could support anything, but the fact is that only the outer facings are of stone, and inside the core is just a mere filling of rubble. That makes a very strong column if the foundations are all right, but the trouble is that they are not.

Yet Sir Christopher Wren made foundations which he believed would last for all time.

What St. Paul's Stands On

The present cathedral, like the old one, stands on a layer of hard brick earth, but under that is a considerable depth of sand, gravel, and water. Below that, again, is the solid London clay. The sand and water were quite able to hold up the brick earth so long as they stayed there, and Wren had no reason to suppose they would not stay. But at the last corner of his foundations he found that the brick earth had been removed by some previous diggers, and he sank a shaft right down to the clay, scores of feet below at the level of low tide. From that foundation he built up a solid pier on which to rest the last corner of his foundations.

If Wren knew what he was about, then, in laying his foundations, how is it that they are proving insufficient now? Because all over London wells have been sunk deeper and deeper to get drinking water for the ever-growing population. So that there has been a slight but definite subsidence.

The Vibration of Traffic

That is the first cause of the uneasiness about the foundations of St. Paul's. Another is the enormous increase in the vibration caused by the traffic all round the great building. A third is the disturbance caused by the much deeper digging all around which the foundations of the great modern buildings require.

So Paul's mighty dome, and the drums on which it is reared, lay a weight on the supporting piers which they, with their rubble cores and their undermined foundations, cannot safely bear. Some day the dome and the drums, the circular walls supporting it, and the piers and their foundations, may all have to be taken down and built up on fresh foundations.

Strengthening the Piers

But that day, in the opinion of the expert commission, has not come yet. The piers are to be strengthened by the forced injection of cement into the rubble to hold it solid and firm in its stone casing. Then those stone facings that have cracked under the strain are to be replaced by new ones, and the next generation will decide whether these precautions are enough.

Our generation has been very good to posterity. It is bearing intolerable burdens. It is paying off war debt at enormous cost, in times of acute depression, taxing itself to an extent that no other country dare attempt, so that the burden on its successors shall not be too heavy. And so it can leave the rebuilding of St. Paul's to the next generation with a clear conscience, always assuming that the present measures prove adequate for the time. Even so the new work will cost £140,000.

WHY THE MORNINGS ARE DARK

A JANUARY PUZZLE

Why Our "Shortest Day" is Almost the Longest

STAR DAYS AND SUN DAYS

C.N. readers often ask us why it is that in January, after the shortest day has passed and the days are said to be getting longer, the mornings seem to grow darker instead of getting lighter.

To understand this curious fact (for the mornings really are darker) we must first understand that, though we measure our days by the Sun, a sun day varies in length at different seasons of the year owing to the fact that the Earth in travelling round the Sun goes at different speeds at different times of the year.

We all know that the Sun is not in the centre of the Earth's orbit, and as it is nearer the Earth in winter than in summer it attracts the Earth more powerfully in winter, causing our planet to move faster.

Getting Over a Difficulty

It would be very inconvenient if we had to keep adjusting our clocks to the varying lengths of the days, and so, to get over the difficulty, the lengths of the solar days are averaged through the year, and an average day of 24 hours is taken for all the days.

To know how this length is arrived at we must look a little farther into the question of time. There are some stars which never set in England, and if one of these could be watched by day and night it would be found to describe a complete circle in the sky in 86,164 seconds, or 23 hours 56 minutes 4 seconds. That period is called a star day (or a sidereal day) and is the exact time taken by the Earth to make one complete turn on its axis.

A Matter of Seconds

Now, the Sun takes longer than this to make one apparent journey from noon to noon, and the difference between a sun day and a star day is not the same at all periods of the year. The average difference, however, is found to be 236 seconds, and this, added to the star day of 86,164 seconds, gives 86,400 seconds, or an average calendar day of 24 hours. This is our ordinary day.

If the Sun and a particular star could be observed on the meridian at the same moment one day, on the next day the star would appear on the meridian nearly four seconds earlier than the Sun. The reason for this is that, owing to the star's immense distance from the Earth, our planet's journey through space makes no apparent difference in the relative positions; but we notice the difference in the Sun's position because he is so much nearer.

The Solar Day

Now, as we have seen, the solar day varies in length, and December 21, which we call the shortest day because it has least daylight, is really almost the longest day of the year if we count from the time the Sun is on the meridian to the next time it appears there.

The result of all this is that for a week or two in January we get darker mornings and lighter evenings. The difference in length between forenoon (or the 12 hours ending at midday) and the afternoon (or the 12 hours ending at midnight) is sometimes half an hour, but our clocks, marking the average solar day, set right the differences throughout the year.

The difference in the lengths of the solar days causes our noon to vary in relation to the Sun, and what happens is

A WONDROUS CHANGE FOR THE BETTER

What Ten Years Have Done for the East End

A MAGISTRATE TALKS TO THE C.N.

For most of last century and the first ten years of this the Ratcliff Highway and the Whitechapel Road had the worst of characters.

Fifty years ago evil infested these streets and made them notorious.

But now all this is changed, and the C.N. has had the chance of discussing the change with Mr. J. A. R. Cairns, the magistrate who sits at Thames Police Court in Stepney and is a stout defender of the reputation of the East End.

"The Ratcliff Highway is quite respectable," he said. "Whitechapel Road is a handsome and prosperous street, where you see all the latest fashions and can buy all the best there is to eat, drink, read, and wear. In fact, there is not a single street in all the East End, except perhaps one or two back areas in Hoxton, in which I would not feel myself safe at any hour of the day or night."

Disappearing Slums

"We have," continued Mr. Cairns, "the most law-abiding, industrious, self-respecting population that could be desired. The slums that used to disgrace the district have been largely cleared away, and, although there is still much overcrowding, there is neither crime in the East End nor disorder nor misery."

"There are other parts of London, with better reputations, in which you will find slums and all the wretchedness and privation that accompany them. But Whitechapel and Stepney, with their well-built houses nearly a century old, their wide streets, open spaces, low roofs, and unobstructed sky-line, were not intended to be slum areas when well-to-do merchants and tradesmen lived in Leman Street and Great Prescott Street, and sea-captains had their comfortable homes off the Commercial Road. Whitechapel and Stepney and Shadwell have had their bad days, but are now decent, law-abiding neighbourhoods. Even Limehouse has changed for the better."

Less Drunkenness

"And the reason is that the people are better than they were ten and twenty years ago. They are more self-respecting, more industrious. There is less drunkenness, more friendliness. There are many things to interest and please the mind of the poorest, and more time and means to enjoy them. The standard of living has gone up, and men and women have more chance than they ever had to lead a decent life. It is infinitely to the credit of human nature that they take the chance whenever they get it."

If this is the conclusion of a magistrate who sees so much of the sadder side of life, surely those of us who are far removed from poverty and wretchedness ought to make up our minds to improve every moment of time that is granted to us.

Continued from the previous column

that, though the Sun is rising earlier and we should therefore expect more light, this extra light comes to us rather after noon than before it. Light begins a little earlier in the morning as the Sun rises earlier, but at the same time noon is coming a little sooner owing to the varying length of the solar days, and from this cause we lose a little more in the hours before noon than we gain at dawn. Therefore it is that the forenoons get shorter just after what we call our shortest day, though the actual time between sunrise and sunset is increasing. In a word, the mornings are a little shorter and the afternoons a little longer at this time of the year.

THE TRAFFIC SCANDAL

London in the Grip of Incompetence

Sir Henry Maybury has been appointed chairman of the committee for controlling London traffic.

He is one of the greatest road experts in the world, and he has a wonderful opportunity of ending what is surely the biggest scandal of disorganisation that a city has ever known.

The traffic of the central streets of London has become an intolerable disgrace to all concerned. The writer of this paragraph has waited in a bus, with a long line of other buses behind him, for half an hour at Charing Cross, and the ten minutes' ride from Piccadilly Circus to Ludgate Circus may now be reckoned to take 40 minutes out of the day of a busy man.

THE GREAT ORGAN

Five Miles of Pipes

What is claimed as the world's greatest pipe organ is being installed in a wonderful new concert theatre in Davenport, Iowa.

It is to have 9737 pipes, which would stretch a distance of five miles. Seventy-horse-power electric motors will be used to pump the air pressure, and the six keyboards will have altogether 307 stops.

The tone range is very wide, from a roar like thunder to notes scarcely audible to the ear. Broadcasting apparatus is already installed in the theatre, and if a musician worthy of this instrument can be found some truly glorious music will soon be filling the ether.

The Whale that Bit a Boat in Two

A big whale is a dangerous creature to meet if it gets angry, and a thrilling story of how a whale turned on a boat's crew and bit the boat in two is told in this week's Children's Pictorial. A fine picture shows the amazing scene.

The C.P. is full of interesting and instructive articles and pictures. Here are the titles of some of the articles:

The Man Who Saved a Great Cathedral.

How New Zealand Lost Her Forests.

An Elephant's Paradise.

Pussy's Safety First.

Jests that Came True.

The Picture Journey Round the World is continued, and there are 15 photographs of the Week's Wild Life. The Children's Pictorial is on sale at all bookstalls on Tuesday.

THREE ARMIES

What it Means to be a Child of the War

Here are three significant facts showing at what cost independence is maintained by the new Continental States created by the war.

The standing army of the United States, with a population of 106 millions, is 144,752 officers and men.

The standing army of Britain, with an Empire to maintain, is 154,167.

The peace strength of the active army of Czechoslovakia, with a population of 14 millions, is 163,683.

PETROLEUM PLANTS

A New Idea for Oil

A French scientist claims that he can grow a plant from which artificial petroleum can be made.

He proposes that a hundred thousand acres of West Africa be devoted to raising this plant, and says 20 million gallons of petroleum could be produced in that area. The oil, he asserts, is as good as that taken from the wells in America.

EVERYTHING ABOUT YOUR BUSINESS

A NEW PUBLICATION

The Harmsworth Business Encyclopedia and What it is Like

HELP IN YOUR CAREER

In thousands of C.N. homes somebody stands at the dawn of a career, wondering where to turn, which way to go. Now comes a book that will help him. Harmsworth's Business Encyclopedia surveys the whole realm of trade and commerce, and deals with every corner of it in such a way that the choice of a business career will be infinitely easier to one who has the aid of this book than to one who has not.

It may be said, indeed, that the great purpose of this new fortnightly publication is to make the choice of a career easier than it is today, and to help to equip its readers for whatever field they choose.

A Sign at the Cross-Roads

Where the Business Encyclopedia will definitely prove its value in C.N. homes is in its simple articles on careers, written by men and women who have won success in their own avenues of life.

Many C.N. readers have come to the point where the life of the school ends; they stand at a cross-road where many ways meet. What they wish for above all things is help to a decision. They will turn with hope to this new work, with its many articles on the professions, and how they may be entered.

The new year is a time of new hope, of new resolution, of new endeavour, and it is the new year that sees the entry of the Business Encyclopedia. This work will give to those who seek the new hope a sound basis on which they may build. In its pages every department of trade is explored, every detail of business planning is explained, and model systems are set forth. Its reading pages are richly adorned with photographs, maps, charts, and diagrams; its helpful articles are from the pens of experts. The book is alphabetical, and covers an infinite variety of subjects.

Famous Contributors

But there is more than information in this book; there is inspiration, too. Lord Birkenhead writes on Reality and Opportunity. Mr. Neville Chamberlain contributes an article on Personality and Success; and Sir John Marriott, M.P., the well-known historian, deals with the romance of Trade. Sir George Sutton, chairman of the company which issues the C.N., writes on Advertising. Having seen something of the programme of this work, we believe succeeding parts will maintain the same high tone as these first pages, and we learn that there are many surprising features to come.

Harmsworth's Business Encyclopedia is the soundest book of business that has ever appeared, and C.N. readers who stand at the gate of a business career should look out for its orange and green cover on the stalls and in the shops. Part 1 is ready now, and each part costs 1s. 3d. As the book will be complete in about 36 parts, it will be a cheap investment for a book with so wide a range of practical usefulness.

A FLEA THAT WILL BE FAMOUS

3000 Years Old

A flea 3000 years old has been discovered in Egypt.

Mr. Arthur Weigall, the famous Egyptologist, was exploring a newly-discovered tomb lately, when he came upon an alabaster jar full of a sticky liquid somewhat like honey. It turned out to be not honey, but castor oil.

More surprising still, in the castor oil was found what proved to be a flea, the only one that has come down to us from ancient times.

PAYING FOR OUR FRIENDS

THE 62-YEARS BURDEN
Our Payments to America and What They Mean

THE FACTS OF A REMARKABLE EVENT

By Our Economic Correspondent

Very few people, we find, understand how we have agreed to pay back to America the sum she lent us in the war, the sum we borrowed to help our friends in Europe.

What we have agreed to do, and it sounds very extraordinary, is to pay the United States, during a period of 62 years, the sum of 11,105 million dollars.

But we did not borrow as much as this; why, then, is the amount so big?

It is big because of the long period of two generations during which repayment is to take place. Interest for the use of the money is added year by year, so that in the end the interest paid will be enormously greater than the principal amount borrowed.

What We Have Paid

As a matter of fact, we borrowed from America roundly £800,000,000, or something over 4000 million dollars, but we shall pay in interest alone about 7000 million dollars!

These figures are so big that it is difficult to realise what they mean. It is also a little difficult to realise that most of the grown men and women now living will be dead before the American debt is paid off.

So far, we have made two annual payments, for we began in 1923. Installments are payable every six months.

The first year we began paying we paid 161 million dollars, of which 23 million dollars was to repay principal and 138 millions for interest.

Last year the payments were very much the same, but as the British pound had come to be worth more in dollars we really paid less in our money than in 1923.

The Final Payment

So it is to go on for sixty more years. Each year we have agreed to pay about 180 million dollars, and as time goes on the yearly payment will cancel more and more principal. Thus, when we get to 1933, we shall pay 184 million dollars, of which 32 millions will go to pay off principal and 152 millions will be for interest.

When 1963 arrives the payment of that year, 180 million dollars, will pay off 83 million dollars of principal against 97 million dollars for interest.

The last year of all, 1984, when a boy of ten years today will be seventy, the payment will be 181 million dollars, of which 175 million dollars will cancel the last bit of principal, and only six million dollars will be due for interest.

Some people urge that we should make a special effort to pay more quickly, because by doing so we should greatly diminish the sum to be paid in the long run. Obviously, the more principal we pay off now the less interest will accrue.

The Load of Taxation

Against this, however, is the fact that taxation is already very high, and that it would put a very severe load on the backs of living taxpayers in order to make things easier for the people of the next generation, who will surely be living in better times, and therefore will be better able to bear the burden.

Altogether, the 62 yearly payments constitute the biggest tribute ever agreed to be paid by one ally to another. It will always be recorded in history as one of the most remarkable happenings in the life of the world, and it is most unlikely ever to happen again. Yet so great is the rush of news in the papers that not one in a thousand among our grown-ups has any idea of the nature of the agreement that has been made.

THE AUTOMATIC POST OFFICE

The Box for Busy Streets
WONDERFUL THING THE POST OFFICE WILL NOT DO

There has been built a wonderful little self-working post office, only 42 inches square and nine feet high, where you can telephone, buy stamps, and post your letters without troubling an attendant. It only wants an arrangement for sending telegrams (a simple matter) to make it complete.

Then, of course, the Post Office is going to have these automatic post offices manufactured by the thousand and set up in every street? Not at all! There is a post office at Bath which has to be closed for rebuilding, and the thing is to go there until the rebuilding is completed. That is all, except that if any other post offices had to be closed for repairs it, or others like it, might be sent there, too.

How like our G.P.O. ! But, of course, it will not do. Automatic post offices, once proved practicable, will have to be multiplied indefinitely till they meet the obvious and well-nigh inexhaustible demand. Such inventions are not just to look pretty; they are for use, and there should be one in every busy street of Central London, into which we could run and buy a stamp, post a letter, send a telegram, or ring up home. Any private money-maker would be glad to show the Post Office how such a thing would pay.

STONES OF WATERLOO

Packing Up a Bridge

The London County Council authorities have a difficult task before them in providing a new temporary bridge that will take the traffic from Waterloo Bridge, for it means that they must take down parts of the old bridge before it has been decided what to put in its place.

It may be decided to build a new but wider bridge in the same place and the same style, or the new bridge may be the old width and another quite separate bridge may be built above or below it, say, at Charing Cross or opposite Aldwych, to ease the traffic.

All this will be decided by a special committee, but as it has to decide the traffic needs of the whole of London above the City, it will take a long time. Meanwhile the making of the temporary Waterloo Bridge cannot wait.

As each stone of the old bridge is removed, it is marked with a number, so that the builders will know where it belongs. Then, if it is decided to build a new bridge in the old style, its sides at least can be made to look like those of the old bridge.

It will take much care and good organisation to put each stone where it can be got at just when it is wanted in the rebuilding; but, happily, bridge-builders are careful people.

THE ELECTRIC "INSECT"

An Engineer's Idea from Australia

One of the most remarkable electric instruments yet made has just come to England. It is the invention of two Australasian engineers named Cutler and Wright.

Known as an "insect" because it is rather like a huge fly in appearance, it is nothing less than a sewing machine which threads a white-hot wire of steel into two overlapping steel plates and welds them firmly together at the amazing rate of thirty feet an hour. It can be run along a sheet of metal by an inexperienced workman, and be used to weld steel piping or the plates of ships, or, indeed, anything.

The nose of the insect is a powerful electric arc lamp, and, from a bobbin behind, steel wire is fed on to the metal and helps to form the electric weld.

C.N. QUESTION BOX

All questions must be asked on postcards: one question on each card, with name and address. The Editor regrets that it is not possible to answer all the questions sent in.

Who was Thor?

Thor was the son of Odin, the second god in the Scandinavian mythology.

Is Iodine a Metal?

No; it is one of the non-metals, and forms beautiful purplish-brown crystals.

Does All Light Travel at the Same Rate?

Yes; at about 186,000 miles a second. The different colour lights do not vary in speed, but only in wave-length.

Among Roman Numerals, What is D with a Stroke Over It?

D with a dash or stroke over it represents 5000; without the stroke it is 500.

What is the Colour of a Pheasant's Egg?

Olive-brown is the usual colour, but the eggs are sometimes olive-green and sometimes greyish-white tinged with green.

Who First Ascended Mount Chimborazo?

This 20,498-foot mountain, in Ecuador, was nearly ascended by Humboldt in 1802, but Edward Whymper, the Englishman, was the first actually to do so, in 1880.

Are Water-Colour Paints Suitable for Colouring Lantern Slides?

No; you need transparent colours, which can be bought separately or in boxes at many colourmen's shops.

How Big is the Egg of the Octopus?

It is small and oval, and resembles a grain of rice, not quite an eighth of an inch long. The eggs are laid in bunches round a common stalk, to which each egg is attached.

What is an Epigraph?

An inscription cut or impressed on stone, metal, or some other hard material, as distinguished from a writing or manuscript. The word is made up of two Greek words meaning to write upon.

Why is a Long Plait of Hair Called a Pigtail?

This is merely a popular nickname for the plait, given because of a supposed likeness to the tail of a pig.

What is the Meaning of the Name Ireland?

It is not certain how the name Ireland came to have its present form, but it is believed to come from the Celtic *iar*, meaning back of, or behind, hence to the west.

Is Air a Mixture or a Compound?

Air is a mixture of gases consisting of nitrogen and oxygen in the proportions of roughly four parts by volume to one. The nitrogen dilutes the oxygen. A small quantity of other gases is also included in the atmosphere, chiefly argon.

What Causes the Colouring of Human Hair?

The colour of hair is caused by pigment granules in the fibre cells. When the colour is lost the hair becomes grey, and when, as sometimes happens, air bubbles enter the pith of the hair, these refract the light and the hair is silvery.

How Can Bones be Dissolved and Used as Manure?

It needs a proper plant to do this. The oil is first extracted by distillation or solvents, and the bones are then treated with sulphuric acid, which gives the soluble calcium phosphate.

Why Do Stars Twinkle and the Planets Not?

The reason for the twinkling of the stars is not fully known. Some scientists think that, owing to the immense distance over which the light has to come, the light in some way interferes with itself, and we get something corresponding to the beat in the sound of a piano or organ. Others think that, being only a mere pencil of light, it is affected by the air in a way the many pencils of light from a planet are not affected.

Did Papin or Watt First Find Out the Use of Steam?

Neither; the use of steam has been known since ancient times, and a kind of primitive steam engine called an aeolipile was made by Hero of Alexandria about 280 B.C. Various inventors, including Papin, the Frenchman, contributed something to making the steam engine possible, but it is to James Watt that the world owes the first really profitable steam engine which could be used for a variety of purposes.

NEXT WEEK'S ECLIPSE

SUN ALMOST HIDDEN BY THE MOON

A Simple Astronomical Model for the Table

WHERE THE ECLIPSE WILL BE TOTAL

By Our Astronomical Correspondent

Next Saturday afternoon, January 24, there will be a very impressive and almost complete eclipse of the Sun.

The Moon will begin to shut off his light from us in south-east England at about 8 minutes to 3 o'clock; and very soon after a small notch will be perceived in the Sun's disc at the point shown in our star map.

This point will be slightly different for places north of London and in Scotland, being a trifle lower owing to the different point of view, for the farther we go northward the lower the Moon will appear to be placed relative to the Sun.

This can easily be seen with the aid of two balls, the larger placed some way



The eclipse as seen from London

behind the smaller, so that one completely covers the other, as seen a yard or two away. If we then raise the head slightly the front one, representing the Moon, will appear lower.

Now, if someone brings this Moon ball along, slowly, from the right towards the left, so as to cause it to pass almost exactly, but not quite, between the eye of the observer and the more distant Sun ball, we shall have a very fair model of what we hope to observe in the heavens, provided that the weather is fine.

In the Midlands and West of England the eclipse will start a minute or two earlier than in London, while along a line drawn from Liverpool to Durham it will begin at 13 minutes to 3 o'clock, and still earlier from north to west of this line, so that in Edinburgh, Glasgow, and Dublin it will start between 16 and 17 minutes to 3.

The middle of the eclipse occurs at about 2 minutes to 4 in London and south-east England, and from one to seven minutes earlier at the places farther north and west referred to. Then from four-fifths to nearly nine-tenths of the Sun will be hidden.

How to Use the Model

Going back to our model again, the Moon ball should be passed from right to left, slightly ascending, to permit the portion of the Sun ball—which should be illuminated—to be visible. Now, if the Moon ball be held there for a while, and the head of the observer be gradually raised to correspond to higher points of observation from the more northerly towns of the British Islands, it will be seen that more and more of the Sun ball will be hidden by the Moon ball. And if the observer's head be also moved a little to the right, or west, to correspond to the more westerly places in Britain, still more of the Sun ball will disappear.

This is precisely what actually happens: the farther north or west that we go the greater will be the extent of the eclipse, so that in the Hebrides scarcely a bit of the Sun's disc will be visible.

A little farther west, in the Atlantic, the eclipse will be total, and over a belt about 150 miles wide and extending to New York, and thence to central Canada, the superb glories of a total eclipse will be witnessed. We shall not see the finish of this eclipse, for the Sun will set at 4.33 p.m.

Other Worlds. Mercury, Venus, and Jupiter south-east and Saturn south in the morning. Mars and Uranus south-west in the evening.

THE WIZARD OF KANDARA

A Story of Adventure
in Wildest Africa

Told by Major
Charles Gilson

What Has Happened Before

John Fountain and his young companion Neil Ranson rescue from an African cataract a native of Kandara, a city hidden among the mountains.

From him they learn that a well-known explorer, Henry Tremayne, is held prisoner by the High Priest of Kandara, and decide to go to his aid.

CHAPTER 5

Kandara

It would be tedious to describe in detail a journey that took them more than a month.

Idina guided them by the Sun and by the stars towards the north. Leaving the river valley, where they left their canoe, they were many days in the forest; and when, at last, they came forth again into the sunlight they were all but skeletons, half starved to death, their clothes torn to ribbons upon the thorn trees that abounded in the undergrowth.

Night after night they talked together at the camp-fire, when Idina told them of Kandara, a city, by his account, as wonderful as Memphis or as Thebes.

Worshipping Osiris, Isis, Horus, and some score of others, the people of Kandara were descended from the Ancient Egyptians.

They were a cultured people, skilled in all the arts, great masters of architecture, who could both read and write, making use of hieroglyphics little changed since bygone times.

Punhri, so Idina said, was the declared enemy of the Queen. He could not dethrone Zarasis, for she ruled by "divine right," herself a descendant of Osiris. But there was little else he dared not do.

"And what of Tremayne?" asked Fountain.

Idina smiled, and shrugged his shoulders.

"He has looked upon the Queen," said he. "He has seen that Zarasis is beautiful as the moonshine upon lilies. If the Queen had her own way she would place the White Wizard upon her throne; she would make him King of Kandara. Instead of this, he has been thrown into a dungeon, where he lies awaiting the pleasure of Punhri, whose heart is like the heart of a poisonous snake."

Fountain turned to the boy.

"We shall get there too late to help Tremayne," said he. "He will have been put to death, murdered in his prison."

Idina, who every day was becoming more proficient in the English language, understood what had been said.

"I do not think so," he replied. "Dario, who commands the Royal Bodyguard, is with the Queen. If any harm be done to the White Wizard, it will mean civil war."

Dario he described as the greatest warrior in the kingdom, one who in battle gave no other order to his men than to follow whither he went. His dazzling golden armour was for ever in the forefront of the fight; and he was so scarred by wounds he had received in wars against savage forest tribes that his bearded face was disfigured and hideous to see.

Punhri, the Wizard, on the other hand, held power by dint of his magic and what was called the evil eye—from which they might have guessed that the man was gifted with hypnotic powers. All were afraid of him, save only Dario.

Because of these long nightly talks they felt, as they drew nearer to their destination, that they would not come wholly as strangers to the city of Kandara.

They came forth from the forest upon an open, park-like country, where they were able to make greater progress, often marching as many as thirty miles a day. As they continued their journey,

the trees with which this plain was interspersed became both smaller and more scarce; until at last they found themselves upon a wide plain, where herds of antelope abounded, and where nothing grew but long, rank grass that waved in the wind like rye.

They did not want for food; for, though they had left all their shot-gun ammunition and such surplus stores as they could spare in the place where they had hidden their canoe, they had brought with them three rifles and their revolvers, dividing the ammunition for these equally between the three of them. Indeed, with the exception of the medicine-chest with which they dared not part, and a portion of the tow-rope, they carried little else but arms and ammunition.

It took them three and a half days to cross the plain, which rose upon a gentle gradient to a higher altitude. Before them, wonderfully distinct in that clear atmosphere, was a great range of mountains, many of the peaks of which were snow-capped, extending in a semi-circle across the northern sky.

As they began their ascent of the lower slopes of these mountains, they realised for the first time how truly inaccessible to the outside world was the forgotten civilisation that lay beyond; and there is little doubt that, if they had not had Idina to act as guide, they could never have found a way across.

The man led them along narrow shelves of rock, but a few feet across, a yawning abyss on one hand, a sheer cliff on the other, rising to the very clouds.

Had they not brought with them a portion of their tow-rope for the purpose, they could never have accomplished the ascent; and, even as it was, there were places where two of the party had to go forward in advance, to haul up the rifles and ammunition.

They gained the summit upon a certain evening when they looked down upon a wondrous sight that caused them to hold their breath. They beheld a plain, tree-grown save where it had been given over to cultivation. Near the centre of this plain, though somewhat toward the south, was a lake as blue as one of the lakes of northern Italy, and shaped roughly like the ace of hearts.

From that altitude the water was like a mirror, smooth as glass. Scattered upon the lake were islands, and on nearly every one of these were two or three great buildings; square, flat-roofed palaces, with many windows white in the sunshine, as if they had been built of marble.

But the greatest wonder of all was the city itself, lying as it seemed upon the margin of the lake but a little way below them. For here were temples and mansions, palaces and gardens, wide streets and open squares, great obelisks and gigantic statues, hundreds of feet in height, of strange, heathen gods.

"Behold!" Idina cried, with pride ringing in his voice. "Behold the city of Kandara!"

CHAPTER 6

In the Palace

THE following day Idina conducted them to a grove of gigantic yew trees, where there were also junipers and witch-hazels, and here they camped.

"You must remain here," said Idina, "till tomorrow night. Before daybreak I will return with news. I go my way into the city to find Dario, who will befriend us."

Soon after he set forth upon his journey, while Fountain and Neil were glad enough to avail themselves of an opportunity to rest.

The evening of the next day found them refreshed alike in body and in mind, but it was not until about one o'clock in the morning

that Idina returned, approaching so silently through the wood that he took them by surprise.

"Come," said he, in a quiet voice, "Dario, the Captain of the Bodyguard, sends you greeting. At the same time, he warns you that once you pass the city walls you take your lives in your hands. He cannot be answerable for your safety."

"For that," said Fountain promptly, "we care little or nothing. Our main concern is to know whether Tremayne is yet alive."

"Not a hair of his head has been touched," replied Idina. "The High Priest has tried every means to persuade the Queen to sign his death warrant."

"And she refuses?" asked Neil. "She declares," said Idina, "that she herself would rather die. But, my friends, it is necessary that we enter the city before daybreak. Dario awaits us at the outer wall."

They followed a kind of bridle-path that led downhill toward the lake. In the moonlight, as they drew nearer to the city, they could see the towers and minarets of Kandara standing forth before the starry sky. The moonlight shimmered upon the surface of the water, where the palaces on the islands resembled fairy castles. When they came within sight of the great massive walls they could hear the night watchmen, stationed upon the turrets, calling the hour from post to post.

But when Neil Ranson beheld Dario, the Commander of the Bodyguard, the boy was lost in admiration. For this mighty man of war reminded him of one of the paladins of old.

He was deep of chest and broad of shoulder, his bare, hairy arms like those of a Hercules. In his golden armour, glittering in the moonlight, he was a soldier every inch. As Shakespeare has it, he was "bearded like the pard," and his face was so disfigured with sword-cuts and white, horrid scars that he looked like a bulldog that is for ever fighting.

He saluted the strangers by raising his right hand above his head, and then addressed them in his own language, Idina acting as interpreter.

"Welcome to Kandara," said he. "You are brave men upon a braver mission. I have orders to conduct you to the Queen."

"She will see us tonight?" asked Fountain.

"Everything is arranged," said Dario. "We repair to the Palace by way of a subterranean passage that is never used. We will be met by Didorian, the Queen's chief maid-in-waiting. I saw the Queen myself last evening. She gladly welcomes you, not only as honoured

guests, but on behalf of the white man who is a prisoner in the Castle."

Fountain, as he often liked to declare, was essentially a practical man. He had no wish to act in the dark.

"But what are we to do when we are once inside the Palace?" he asked.

Dario threw out his hands.

"We are the children of the gods," said he. "Osiris watches over us; it may be that Anubis awaits us at the gate of the tomb. Destiny is ruled by the stars."

"Lead on," said Fountain. "That is good enough for me."

They had talked together in the deep shadow at the foot of the city wall. Holding to this for a little way they came presently upon a soldier whom Dario had posted at the entrance to the passage. This man carried a long spear and wore a square cut beard, like the Captain of the Bodyguard himself, who opened with a key a little door in the wall not more than two feet square, through which they were obliged to crawl on hands and knees.

The soldier going before them with a lighted torch, they walked for a mile or more along a dark and narrow tunnel and came at last into a series of catacombs, where they entered one chamber after another, all alike inasmuch as the walls were adorned with various pictures and designs.

And then a final spiral staircase brought them into a chamber that was magnificent to see. It was of marble, and in the middle of the floor was a great bath where a fountain played. At the top of the steps leading down into the bath was a couch, the ends of which were wonderfully carved to resemble the heads of lions.

From the farther end of this great room a lady came towards them. She was but a girl in years, and very beautiful and slender. She was clothed in a tight-fitting garment that was caught tight about her knees, and around her head was a silver bangle. Her skin was of so faint and delicate an olive that she was almost white.

When she saw the two Englishmen she prostrated herself before them, actually going upon her knees.

"Didorian, at your service, sirs," said she. "The Queen has bidden me conduct you into her presence."

"She is awake?" Idina asked.

"I left her sleeping," replied the lady. "Every day now she seems to grow more weary, more heavy of heart, and nearer to despair."

"Lead on," said Dario. "Go before us, and acquaint the Queen that we are here."

Following Didorian they crossed the great Room of the Bath and entered a smaller chamber, the pillars in which were painted all the colours of the rainbow. And here was a door with a great golden knocker, fashioned like the head of a hawk.

Didorian knocked three times, each time louder than before, and then, receiving no answer, she somewhat timidly turned the handle.

"Zarasis sleeps," she whispered.

"Wait here. I will awaken her."

Silently she opened the door and passed into the room beyond, which was but dimly illumined by a single lamp burning on a marble pedestal.

And then upon a sudden those without heard her give a faint shriek that was little more than a gasp.

Dario took a step forward, to meet Didorian upon the threshold. In the glaring light of the outer room the lady's face was like ash. Clapping her hands together, in the utmost state of alarm, she addressed herself to the Captain of the Bodyguard.

"The Queen is gone!" she cried.

"She is not here!"

"Not here!" Dario exclaimed.

"Impossible!"

"It seems so," she answered, in a weak, faltering voice. "I left her sound asleep not three hours ago. And now—she is not here!"

TO BE CONTINUED

Five-Minute Story

Billy Watson

BILLY WATSON longed to learn a trade, but apprenticeship means low wages or none at all, and, with a widowed mother and five brothers and sisters younger than himself, Billy had to be content as an errand-boy.

Not far from the Watsons' cottage there was a big house occupied by Miss Bennett, an elderly lady who was a slave to her old-fashioned furniture.

When Billy carried parcels of groceries to her he could see newspapers spread carefully over her handsome carpets to protect them from dirt and dust. Her lovely old furniture was simply winking with shininess, and her doorstep was as white as snow. She approved of Billy. He was so careful not to print muddy marks on her clean step, or tarnish the knocker with grimy fingers.

Once she gave him a piece of gingerbread, and Billy was grateful, for hard frost was holding the country in its cruel grip—hungry weather for a growing boy not too well nourished.

Billy slept in an attic with three little brothers, and one night the cold was so bitter that he lay awake long after the church clock had struck two. He could hear a queer rushing sound as though rain had come, and then down the street came hurrying footsteps and loud knocks on the cottage door.

Billy flung open the window and looked out. On the pavement stood Miss Bennett, wrapped in a red dressing-gown and wringing her hands.

"Boy, come down at once! I'm in dreadful trouble. The water-pipes have burst, and the water is running down the stairs, and I can't find a policeman!"

Billy flung on his clothes and rushed to Miss Bennett's house. There he found the water pouring down her precious Brussels stair-carpet, and the poor old lady in tears as she tried to mop it up.

"Where's the stop-tap, miss?"

"We can't get to it without a plumber. It's in the yard under a big stone that is frozen into the ground."

"We can't get a plumber now, miss. It's a lock-up shop."

Billy rushed for the coal hammer, and in a few minutes he had the stone raised and the water turned off from the main.

Then he dashed to the icy loft and baled out the cistern, and the flow of water stopped running down the stairs and through the ceilings.

He was a very cold Billy then; but in the morning he had his reward. Mr. Smith, the plumber, arrived at the cottage.

"Mrs. Watson, I want you to let me have that boy of yours. I've been looking for a boy with a head on his shoulders, and I'll give him a good start."

Now Billy is a plumber. He starts out every day with a bag of tools, and feels a very important head of the family.

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It's a Sad Heart that Never Rejoices



Dr. MERRYMAN

"This is a dreadful photograph," the lady protested. "Why, it makes me look ten years older than I am."

"That is an advantage, madam," replied the photographer. "In ten years' time it will be more like you than it is now."

□ □ □

A Built-Up Word

A BUSY insect we in summer see,
Pattern to us of patient industry,

But ere its name you're writing down today
Be certain that you cut its tail away.

And next you have a very little word,
But often used of man, creation's lord.

My third's a pretty insect, small and grey,
A curious type of beauty and decay.
Join these together and soon you will see

A mighty creature's name as 't used to be.

Solution next week

□ □ □

Do You Live at Leith Hill?

THIS name is a curious example of tautology, for both Leith and Hill mean the same thing. Leith is the Old English word hlith, which means a slope, or hillside.

□ □ □

WHY does a cook never make a square pudding?
Because she wants it to go round.

□ □ □

The Tailor's Bill

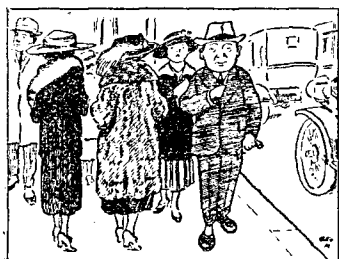
THERE was a young man of Mill Hill
Who received from his tailor a bill.
Of no consequence
Were the shillings and pence,
But the pounds made him frightfully ill.

□ □ □

The Safety First Alphabet



K is for Kerb—'tis an excellent plan
To stick to the kerb just as long as you can.



L is for Left; all wise folk are agreed
That this is the side on which all should proceed.

□ □ □

Those Who Wait

THEY had been playing opposite the same house for ten minutes when suddenly the window was flung up and some boots, a hairbrush, a lump of coal, a brass knob, and the contents of a water-jug were flung down on them.

"Well, well," remarked the from-home resignedly, mopping his face, "I expected as much. They do say (don't they?) that all things come to him who waits."

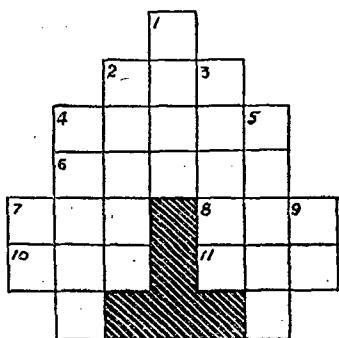
WHY are postage stamps in a sheet like distant relations?
Because they are only slightly connected.

□ □ □

Cross Word Puzzle

HERE is another cross word puzzle, harder than the one given last week. The clues to the words are:

READING DOWN.—1. In a little while. 2. Fast. 3. What a hen does. 4. The rabbit's enemy. 5. Throws. 7. A medical man. 9. A university degree.



READING ACROSS.—2. A dandy. 4. Wild plums. 6. A fresh-water fish. 7. A female deer. 8. A book by Rudyard Kipling. 10. A destructive animal. 11. Between England and France.

Solution next week

□ □ □

His Strong Point

THE manager was interviewing an applicant for a situation. "Is there anything you can do better than anyone else?" he asked. "Yes, sir," was the reply. "I can read my own writing."

□ □ □

WHAT is the most dangerous kind of assassin?

A man who takes life cheerfully.

□ □ □

Jack and Jill

THIS is how the old nursery rhyme would be written as a cross word puzzle:

Boy's name and girl's name went up the natural elevation of earth or rock

To fetch a conical or cylindrical vessel of hydrogen and oxygen.

Boy's name descended suddenly by the force of gravity and fractured his skull.

And girl's name came falling violently and suddenly subsequently.

□ □ □

Obedient Instructions

A VISITOR was entering a museum when he was stopped by the new doorkeeper.

"Pardon me, sir," he said, "but you must leave your umbrella here."

"But I have not got an umbrella," replied the man in surprise.

"Then I'm afraid you must go and get one," said the doorkeeper firmly. "That notice says that all umbrellas must be left at the door."

□ □ □

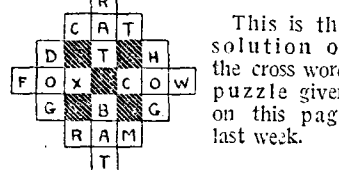
WHAT is the greatest of all riddles?

Life; because we must all give it up.

□ □ □

ANSWERS TO LAST WEEK'S PUZZLES

The Cross Word Puzzle



This is the solution of the cross word puzzle given on this page last week.

Fond of Company. Co-nun-drum

What Am I? Bat

Who Was He?

The Scottish King was Robert Bruce

Jacko Goes to the Zoo

JACKO was delighted when his father said he would take them all to the Zoo one Saturday afternoon.

And when the great day came he was so excited that he got quite out of hand. He had spent all his pocket-money on buns and nuts to throw to the animals, and he had so much to carry that it was a wonder he ever got to the Zoo at all!

It was a lovely day, and they all enjoyed themselves tremendously—except Adolphus, who made himself very unpleasant. He hated going out with his family, for he thought it beneath his dignity to be seen with the baby in its go-cart. And it didn't make him any more pleasant when he dropped his walking-stick into one of the enclosures and the hippopotamus trod on it!

He was as mad as could be, and when he saw Jacko grinning he fairly went for him. However, Mrs. Jacko managed to restore the peace, and they all moved on to see some other animals.

Jacko had a high old time. But he soon got rid of all the buns and things he had brought with him, and then it wasn't so much fun, for none of the animals took any interest in him when he hadn't anything to give them.

He got a stick, and tried prodding them through the bars of the cages; but a keeper soon put a stop to that.

"Out you go," he said angrily, "if you can't keep your fingers off." And he kept his eye on Master Jacko for quite a long time after that.

At last they came to the giraffes, and Mrs. Jacko thought they were the funniest things she had ever seen.

"But everything has a purpose," she said, "and I've no doubt they've a use for their long necks."

And she was quite right. Before you could say Jack Robinson,



"No doubt they've a use for their long necks," said Mrs. Jacko

one of the giraffes had leaned over the palings and snatched the hat off her head!

Mrs. Jacko shrieked with terror, and a keeper came running up to know what was the matter. He was furious when he saw the giraffe chewing up her hat, and said she ought not to have gone so near. But at last his good-nature got the better of him, and he opened the door of the giraffe house and went in after the hat.

"Though I doubt if it'll be much use to you, ma'am," he said.

It was Jacko's opportunity. He followed the keeper into the giraffe house. And the next minute he had jumped on to one of the giraffe's backs and was holding on round its neck.

The keeper had the shock of his life when he saw Jacko. "Get off at once!" he roared, making a dive at him.

But the giraffe careered madly round and round the enclosure, with Jacko holding on for dear life. And at last it shot him high up into the air.

Jacko thought he was never coming down again. And he wished he never had when he landed—right in the arms of the angry keeper!

The paragraph on the right is a French translation of the paragraph on the left

A Terrible Fate

A bad drought in the State of Louisiana has resulted in a terrible death for thousands of wild ducks.

Parts of the State are dotted with huge, open, excavated earthen tanks for storing crude oil, and when the ducks arriving from the north are unable to locate any of their old ponds, marshes, or other haunts, they have been alighting on the oil.

This heavy oil soaks through their feathers, and the poor creatures are never able to rise again, but simply float there till they die.

Une Mort Terrible

Une forte sécheresse dans l'État de la Louisiane a causé la mort terrible de milliers de canards sauvages.

Certaines parties de l'État sont parsemées d'immenses réservoirs en terre, découverts, où l'on accumule le pétrole brut; lorsque les canards arrivant du nord ne parviennent pas à découvrir leurs anciens étangs, marais, ou autres retraites, ils se posent sur le pétrole.

Leur plumage s'imbibe de cette huile épaisse, et les pauvres créatures ne parviennent plus à s'envoler; elles surnagent là jusqu'à ce qu'elles meurent.

Tales Before Bedtime

Billy's Robin

JUST as Eric, Ted, and Billy arrived to spend the day with Aunt May, she had a telegram calling her away.

The boys were terribly disappointed; but Auntie promised to bring a box of tools from town for the boy who discovered the ways of some animal or bird before she came back, and wrote her the best account of it.

The boys' eyes glowed; and Billy made up his mind that, though he was the youngest, he would win those tools. Then, alas! he fell off a fence and hurt his knee so badly that he had to lie on the sofa for the rest of the day, while Eric and Ted took their tea out into the woods.

What was worse, poor Billy had lost his chance of winning the tools. He very nearly cried after Cook had brought his tea to him, but he was very brave, and took a big bite of cake and tried not to mind his bad luck.

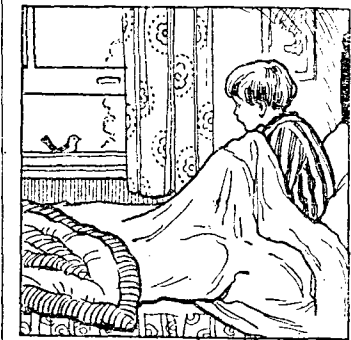
Soon a little sound on the window-sill made him look up, and he saw a little robin flirting his tail and cocking his bright eye at him.

Billy hardly dared to breathe. Then the robin hopped to the floor and pecked about. Soon his hops brought him to the sofa, and he looked up sideways at the tray.

"Come on, Robbie!" called Billy, offering him some crumbs.

Robbie, who did not seem a bit afraid, flew up to the end of the sofa, then on to the tray, and Billy could hardly contain his delight. In a minute the robin was actually pecking crumbs off Billy's plate, keeping a wary eye on him.

He stayed about till Cook



"Come on!" cried Billy

came in, and then he darted through the window.

"Quick, Cook! Can I have a pencil and paper?" cried Billy excitedly.

"Why, surely," said the good woman; and off she went to find them.

When Aunt May came in she found him still writing his story of Robbie. And Eric and Ted had been so busy playing Indians that Eric had only noticed a beetle on the way home, and Ted a dog chasing a cat. So Billy won the tools after all!

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CHILDREN'S NEWSPAPER

January 17, 1925

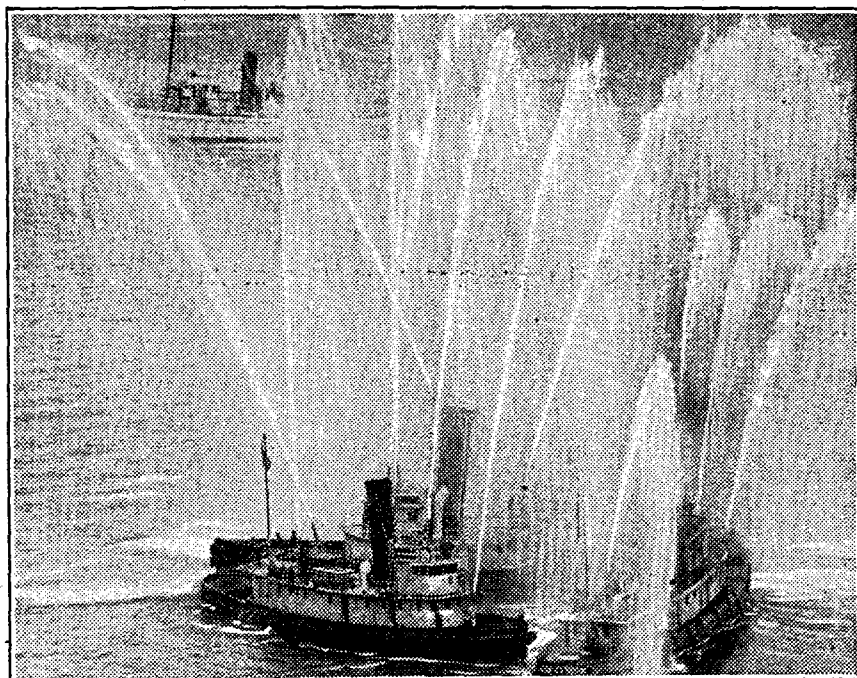
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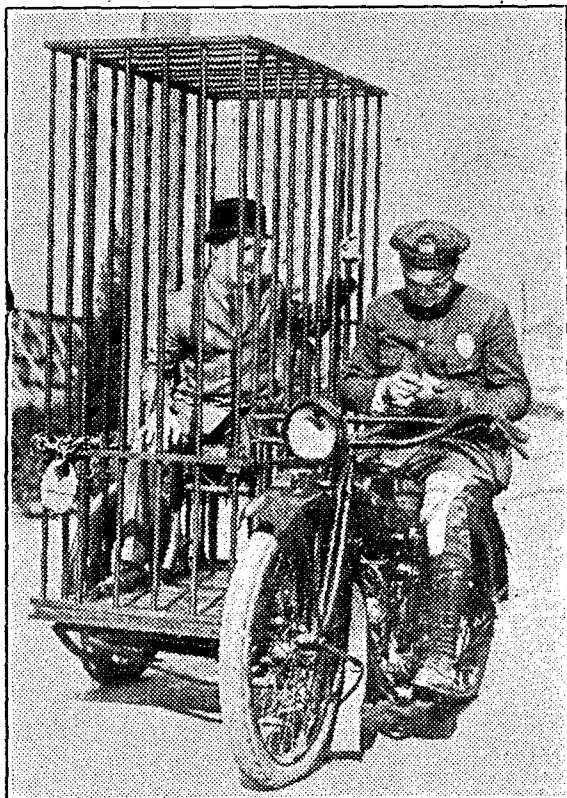
NEW YEAR'S LAMBS · HEREFORD'S WEATHER BOYS · SIX-WHEEL MOTOR-BUS



Figure-Skating in Switzerland—Some fine exhibitions of figure-skating have been given at the winter sports in Switzerland by visitors, and here we see a very effective attitude snapped by the camera while two clever English skaters were showing their skill on the ice



The Floating Fire-Engines Give a Display of their Power—These floating fire-engines at Boston, U.S.A., recently gave a striking display on the water-front of their powerful pumping apparatus, jets of water being shot up to a great height by the boats arranged in a group



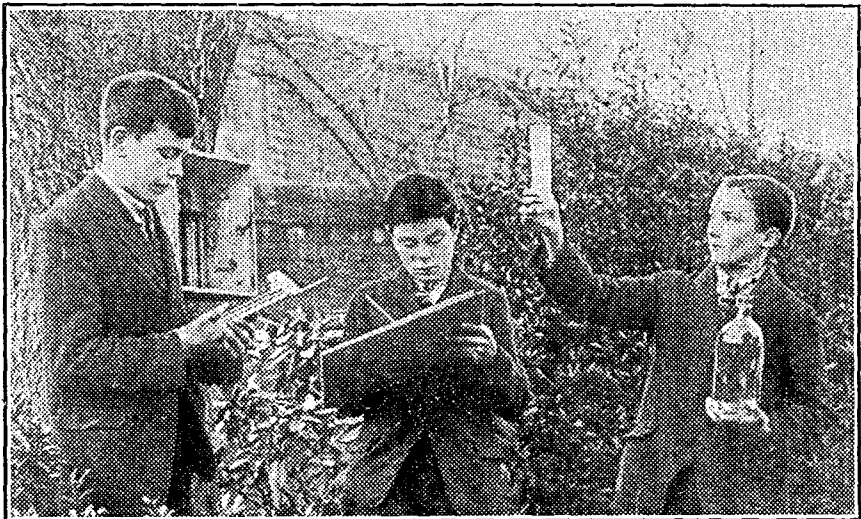
Drastic Treatment for Motorist Offenders—A new and drastic way of treating motorist offenders was recently demonstrated at Los Angeles, California. The police propose to go about the streets on motor-cycles, arresting, and taking to the police station in cages, motorists who break the law



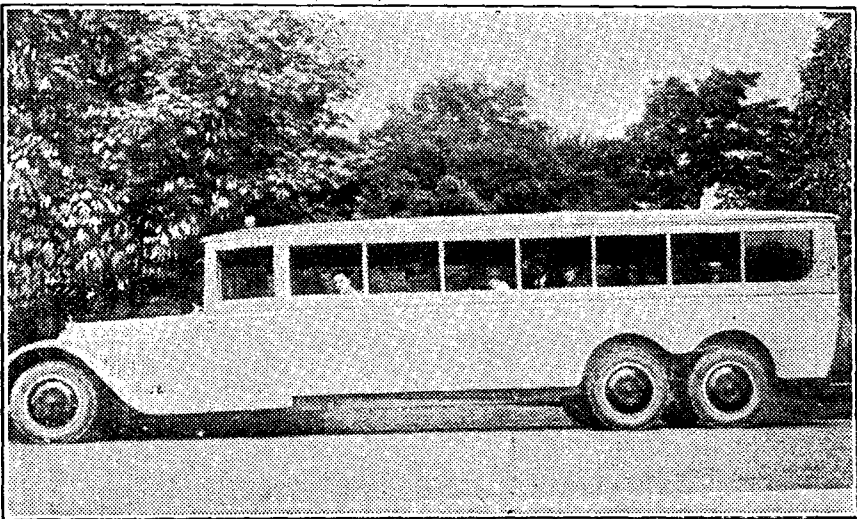
A Chinese Maiden in Her Winter Costume—This little Chinese maiden photographed in her winter dress lives in Shanghai, which is probably the most comfortable Chinese city to live in just now, when all China is in a ferment. Order reigns in Shanghai owing to foreign influence



Young Lambs in the Countryside—The countryside is now beginning to be dotted with young lambs, which are born in large numbers in the early weeks of the year, and here we see three fine little animals which were photographed in the arms of an attendant on a farm at Ugborough, in South Devon



Schoolboys as Meteorologists—A party of scholars at the Industrial Boys' Home, Hereford, learning weather science. They are recording the readings of the thermometer and rain-gauge



The Six-Wheel Motor-Bus—A new development in motor transport is the six-wheel omnibus. The engine operates both pairs of back wheels, giving a maximum of efficiency

HOW WE GAVE THE WORLD ITS USEFUL ANIMALS—SEE MY MAGAZINE FOR FEBRUARY

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